V29980

DLA-M5000LU DLA-M5000LE
DLA-M5000SCU DLA-M5000SCE

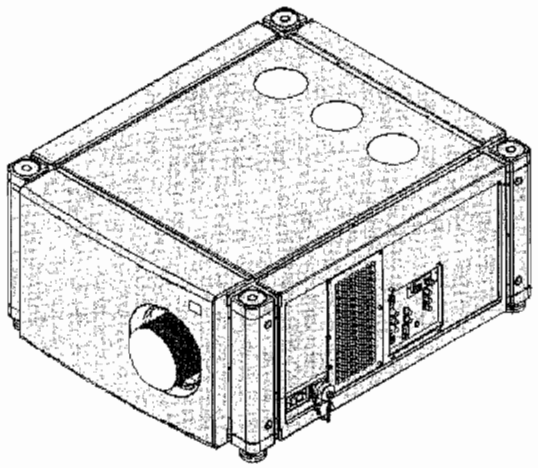
JVC®

SERVICE MANUAL

D-ILA PROJECTOR

BASIC CHASSIS
XA

DLA-M5000LU
DLA-M5000LE
DLA-M5000SCU
DLA-M5000SCE



The present model is based on the DLA-M4000LU / DLA-M4000LE and parts of specifications differ mainly in respect to the optical system. Please refer to the DLA-M4000LU / DLA-M4000LE SERVICE MANUAL (No.51666) regarding items not contained in this service manual.

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No.51796
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SPECIFICATIONS

■GENERAL

Type	D-ILA SUPER PROJECTOR
Dimensions (W×H×D)	68.7cm × 36.8cm - 42.0cm × 37.5cm [27-1/16" × 14-1/2" - 16-9/16" × 31-1/4"] (W : excludes protruding parts)
Mass	80kg [176lbs]
Power requirements	**U model** : AC220V - AC240V 60Hz **E model** : AC200V - AC240V 50Hz/60Hz
Power Consumption	12A
Operating temperature	+5°C – +40°C
Operating humidity	0% – 90% (no-condensation)
Storage temperature	-5°C – +60°C
Storage humidity	0% – 90% (no-condensation)
Remote control unit operation	**RM-M4000G** Distance : 10m Angle: Horizontal =±50° Vertical =±15°
Mass	167g (includes dry cell battery)
Accessories	Remote control unit (RM-M4000G) ×1 Dry cell battery (size : UM-3/AAA/R03) ×2 Wired remote cable (Ø3.5mm stereo : 15m) ×1 Power code (3-pin : 3.35m) ×1
Options	Projection lens 1.5 × electrical zoom lens [50% fix shift]

■OPITICS

Image projection system	3 D-ILA devices • 1 Lens • 3 primary-color shutters system
D-ILA device	0.9-inch(2.3cm) [H1365 × V1024 pixels] ×3 * measured diagonally [Total : 4 193 280 pixels]
Light lamp	Xenon lamp 1.6kW
Projection angle	**Vertical** : max. ±4° **Horizontal** : max. ±5°

■ELECTRIC

Color system	NTSC3.58 / NTSC4.43 / PAL / SECAM (Automatic / Manual)
Resolution	**Video input (4:3)** : horizontal 1000TV lines **RGB input** : H1365 × V1024 dots (S-XGA full resolution)
Contrast ratio	350 : 1 [DLA-M5000LU / M5000LE] 1000 : 1 [DLA-M5000SCU / M5000SCE]
Scanning frequency	**Horizontal** : 15kHz – 82kHz **Vertical** : 50Hz – 78Hz

■INPUT CONNECTORS

Video IN	Y/PB(B-Y)/PR(R-Y)
Y • PB/B-Y • PR/R-Y	Hi-vision base-band signal / Color-differential component signal BNC connector ×3
Y	1V(p-p) 75Ω 3-value sync. / negative sync.
PB / B-Y	±0.35V(p-p) 75Ω / 0.7V(p-p) 75Ω
PR / R-Y	±0.35V(p-p) 75Ω / 0.7V(p-p) 75Ω
COMPUTER	select COMPUTER IN-1 / 2
RGB IN-1	
	Analog RGB signal mini D-sub 15-pin ×1 **R** : 0.7V(p-p) 75Ω **G** : 0.7V(p-p) 75Ω **Sync. on G** : 1V(p-p) 75Ω negative **B** : 0.7V(p-p) 75Ω **Sync.(H/Cs•V)** : 1 – 5V(p-p) high impedance * Sync. mode : automatic selection
RGB IN-2	
	Analog RGB signal / Hi-vision base-band (RGB) signal / Color-differential component signal / External sync. signal BNC connector ×5
R	0.7V(p-p) 75Ω
G	0.7V(p-p) 75Ω Sync. on G : 1V(p-p) 75Ω negative
B	0.7V(p-p) 75Ω
H / Cs (HD)	1–5V(p-p) high impedance positive/negative
V (VD)	1–5V(p-p) high impedance positive/negative * Sync. mode : automatic selection
Video Option Required Optional Video Board (PK-G1101D)	select VIDEO•Y/C required PK-G1101D or Y/PB(B-Y)/PR(R-Y)
Y / C	Luminance/Chroma separate video signal mini DIN 4-pin ×1 **Y** : 1V(p-p) 75Ω negative sync. **C** : 0.286V(p-p) (burst) 75Ω [NTSC] 0.3V(p-p) (burst) 75Ω [PAL]
ViDEO	Composite video signal BNC connector ×1 1V(p-p) 75Ω negative sync.

■OUTPUT CONNECTORS

RGB OUT	Analog RGB signal mini D-sub 15-pin ×1 **R** : 0.7V(p-p) 75Ω **G** : 0.7V(p-p) 75Ω **Sync. on G** : 1V(p-p) 75Ω negative **B** : 0.7V(p-p) 75Ω **Sync.(H/Cs•V)** : TTL level positive / negative * COMPUTER line output (same for input)

■CONTROL CONNECTORS

RS-232C	D-sub 9-pin ×1
REMOTE	Ø3.5mm mini-jack ×1

Design & specification are subject to change without notice.

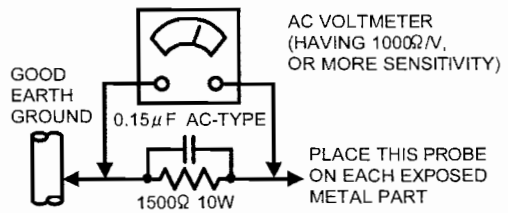
SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
8. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

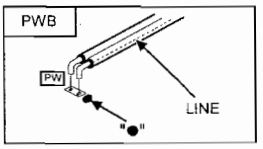
● **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



11. **High voltage hold down circuit check.**
    After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
    See item **"How to check the high voltage hold down circuit"**.

This mark shows a fast operating fuse, the letters indicated below show the rating.

POWER CORD REPLACEMENT WARNING.
Connecting the line side of power cord to " ● " mark side.



■ Warning and caution labels

Labels advising of warning and caution are affixed on and in various locations of the product. Take careful notice of these during service and inspection.

⚠ WARNING Risk of lethal or otherwise serious personal injury.
⚠ CAUTION Risk of personal injury and damage to the product.

Class	Pictorial	Label advisory	Location
⚠WARNING	High voltage	Never open any cover on the projector except the lamp and filter covers. Dangerous electrical voltage inside the projector.	Bottom of rear cover
⚠CAUTION	Hot, shock hazard	Do not insert foreign objects into the ventilation holes as this can result in fire or electrical hazards. Do not block the ventilation holes as this may cause the internal temperature to rise and possibly result fire. When the inside of the unit requires cleaning, consult your nearest JVC dealer or service center.	Bottom of rear cover
⚠CAUTION	High brightness	Never look into the lens while the projector is on. There is danger of eye damage.	Right lower side of front cover lens hole
⚠CAUTION	High voltage	Caution high voltage	Internal Igniter
⚠CAUTION	High voltage	Caution high voltage	Internal Lamp power unit

■ Additional cautionary items

- **High voltage of about 35 kV is applied for lighting the lamp.** During adjustments and other work with the cover removed, extreme care is needed to avoid electric shock.
- Use care to avoid touching the fan or safety switch terminals during work with the cover removed.
- Select a stable, horizontal work site to prevent dropping the product and components.
- Use the power cord and interface cable supplied with the product.

Before starting work, be sure to also check the safety notices contained in the instruction manual.

SPECIFIC SERVICE INSTRUCTIONS

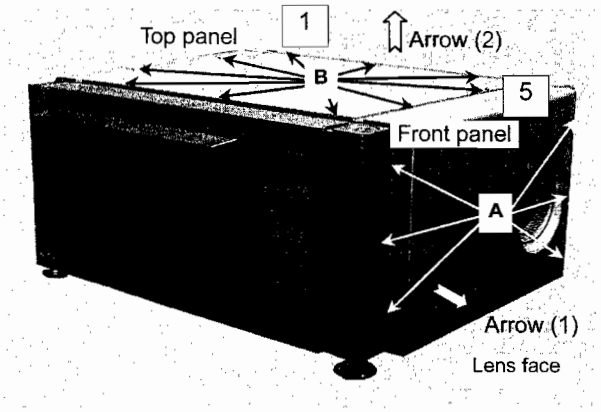


Photo 1

■Front panel

1. Take out 6 screws [A].
2. Remove the front panel in the arrow (1) direction.

■Top panel

1. Take out 10 screws [B].
2. Remove the top panel in the arrow (2) direction.

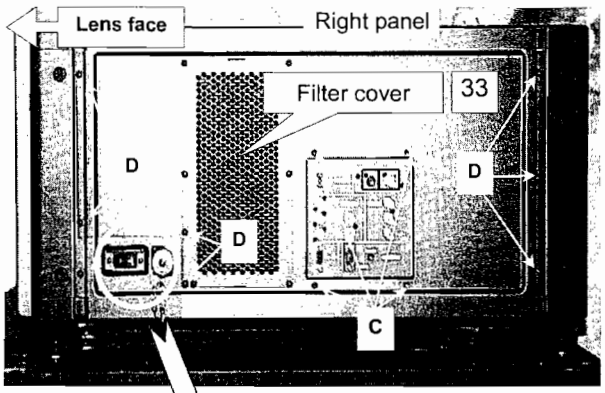


Photo 2

■Right panel

1. Take out 4 screws [C].
2. Take out 7 screws [D].
3. Remove the right panel.

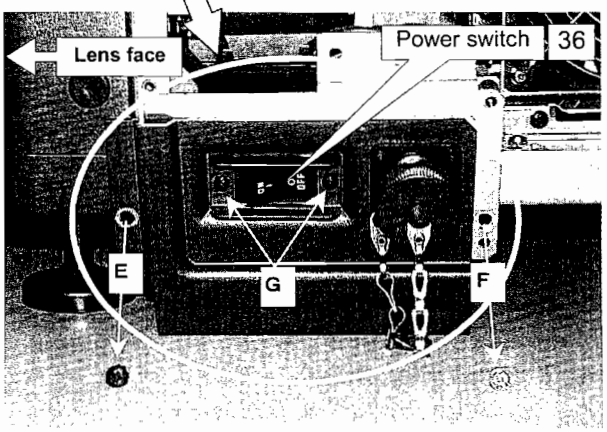


Photo 3

■Power switch

● Remove the right panel (see above).

1. Take out screws [E] and [F].
2. Take out 2 screws [G].
3. Remove the Power switch.

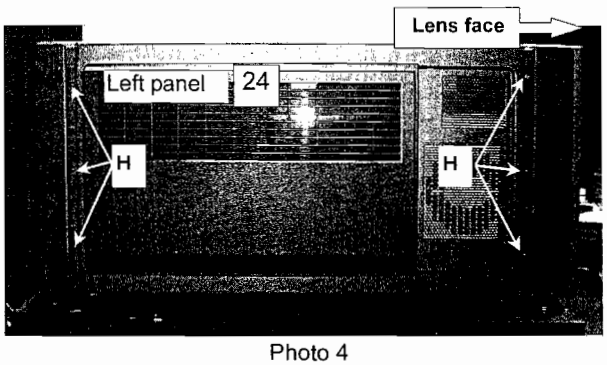


Photo 4

■Left panel

1. Take out 6 screws [H].
2. Remove the left panel.

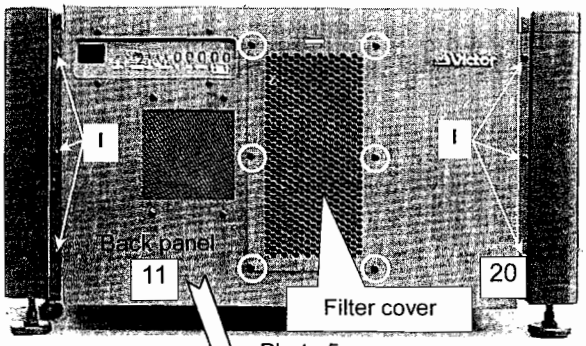


Photo 5

■Back panel

●Remove the Top or Left panel (see page 5).

1. Disengage the operation, IR PWB connectors in 3 locations (see Photo 6).
2. Take out 6 screws [I] of the back panel.
3. Remove the back panel.

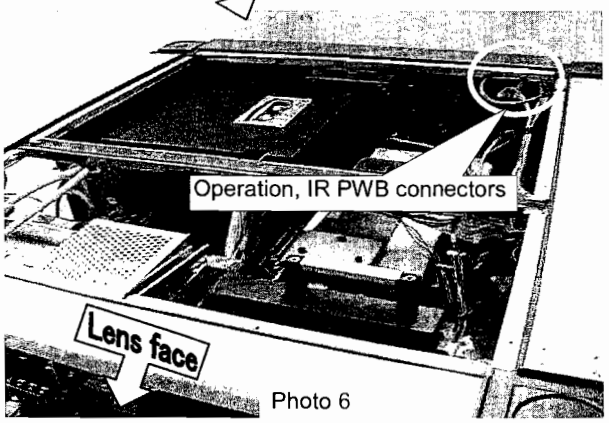


Photo 6

■Air filter (back panel)

1. Take out 6 screws of the air filter (see Photo 5).
2. Remove the filter cover.
3. Take out, clean or replace the filter (sponge).

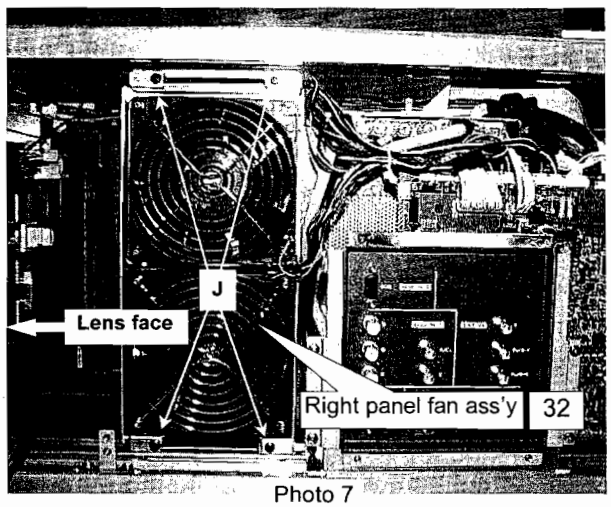


Photo 7

■Right panel fan ass'y

●Remove the right panel (see page 5).

1. Disengage the fan connectors in 2 locations (see Photo 9).
2. Take out 4 screws [J].
3. Remove the right panel fan ass'y (fan can be replaced separately).

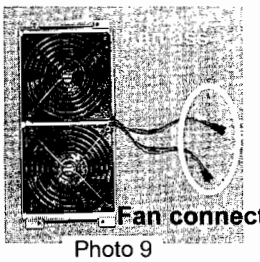


Photo 9

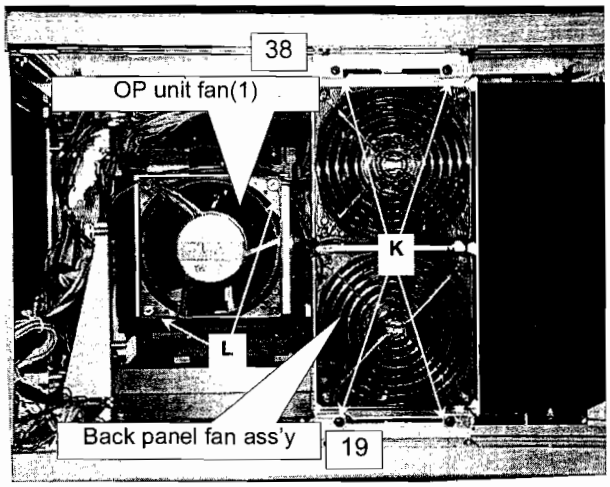


Photo 8

■Back panel fan ass'y

●Remove the back panel (see Photo 5).

1. Disengage the fan connector (see Photo 9).
2. Take out 4 screws [K].
3. Remove the back panel fan ass'y (fan can be replaced separately).

■OP unit fan (1)

●Remove the back panel (see Photo 5).

1. Disengage the fan connector (see Photo 9).
2. Take out 2 screws [L].
3. Remove the OP unit fan (1).

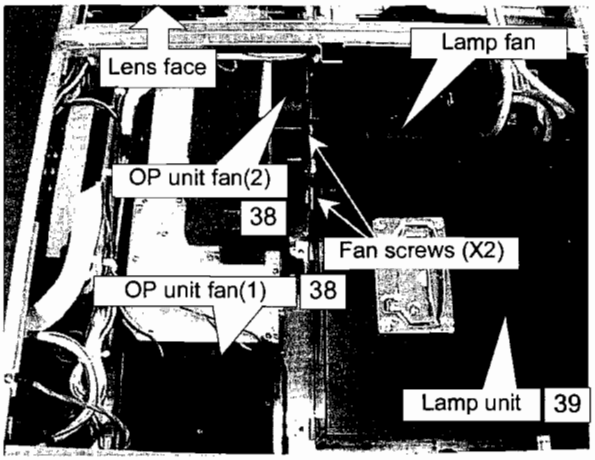


Photo 10

■OP unit fan (2)

- ●Remove the lamp unit (see page 8).
- ●Remove the lamp fan (see Photo 11).

1. Take out 2 fan screws.
2. Remove the OP unit fan (2)

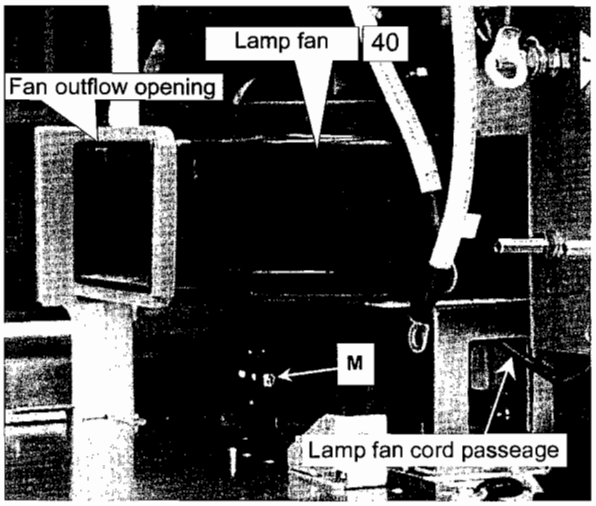


Photo 11

■Lamp fan (blower fan)

- ● Remove the Top and Left panels (see page 5).
  Although work is possible without removing the Top panel, removing it is recommended for easier access.

1. Remove the lamp unit (see page 8).
2. Disengage the lamp fan cord connector.
3. Loosen 1 screw [M].
4. Raise and remove the lamp fan.

Notes:

※ When installing the lamp fan, observe the fan outflow opening angle (see Photo 12).

※When replacing the lamp fan, attach a new gasket to the lamp fan.

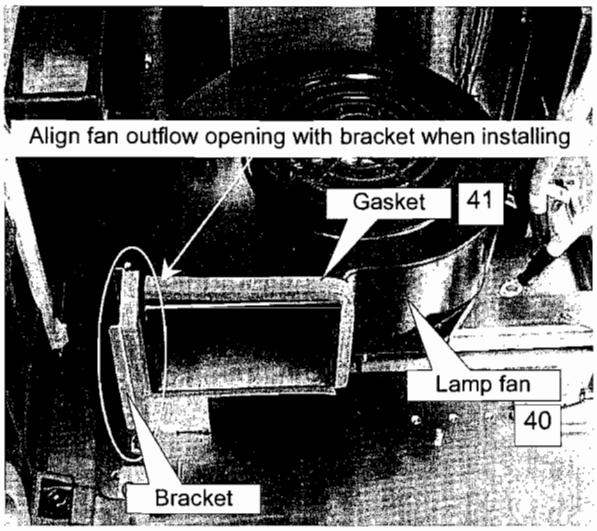


Photo 12

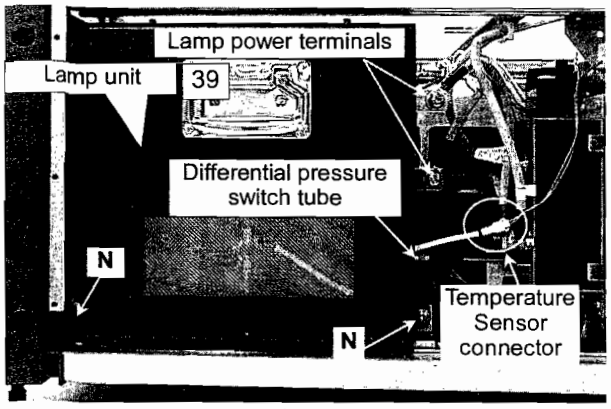


Photo 13-1(QLL0072-001)

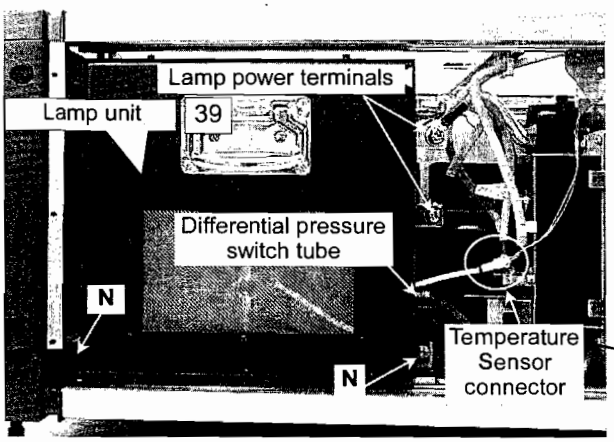


Photo 13-2(QLL0072-002,-003)

■Lamp unit

●Remove the Left panel (see page 5).

1. Disengage cables connected to the lamp power terminals in 2 locations.

Note:

※Use care regarding polarity when reconnecting.

2. Disengage the differential pressure switch tube.
3. Disengage the temperature sensor connector.
4. Take out 2 screws [N].
5. Pull out the lamp unit.

Note:

※When reinstalling, raise the shutter at the right side of the unit and insert. After inserting, confirm that the shutter is opened.(See Photo 13-3)

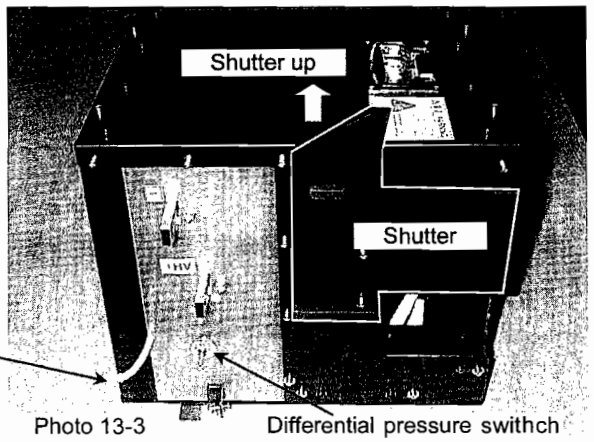


Photo 13-3

Differential pressure swithch tube connector

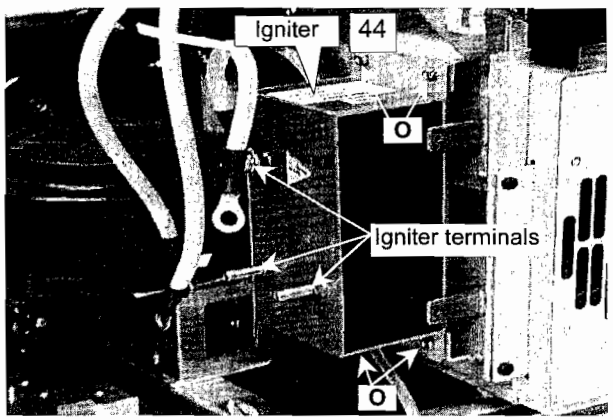


Photo 14

■Igniter

●Remove the Left panel (see page 5).

1. Disengage cables connected to the igniter terminals in 3 locations

Note:

※Use care regarding polarity when reconnecting.

2. Take out 4 screws [O].

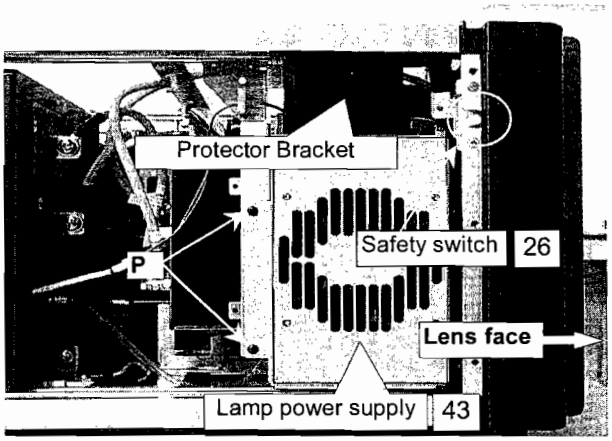


Photo 15

■Lamp power supply (ALPS)

● Remove the Left panel (see page 5)

1. Shift the protector bracket to the side.
2. Take out 2 screws [P].
   Pull out the lamp power supply to where the upper connectors are visible.
3. Disengage the connectors of the lamp power supply terminals (see Photo 16,17).

Note:

※ Use care regarding polarity when reconnecting.

4. Remove the lamp power supply.

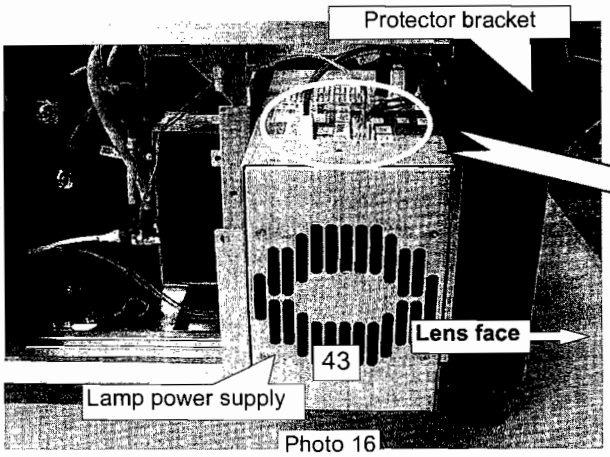


Photo 16

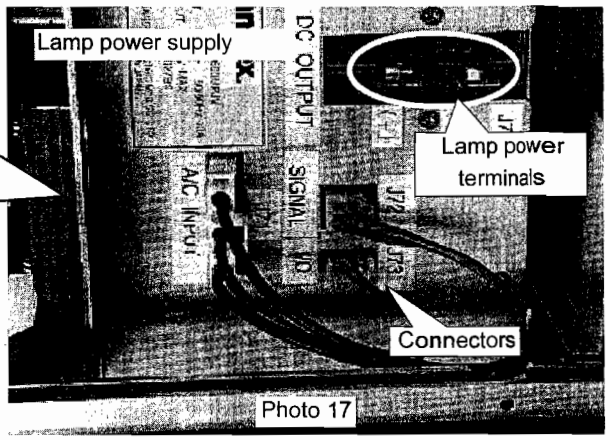


Photo 17

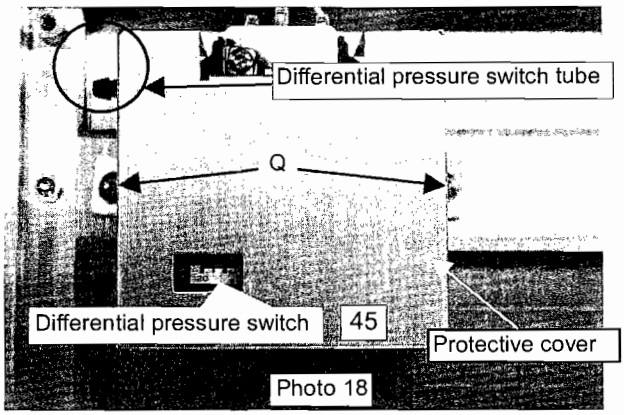


Photo 18

■Differential pressure switch

- Remove the left panel (see page 5).

1. Disengage the differential pressure switch tube. (see Photo 13-1,13-2).
2. Disengage the differential pressure switch connector. (see Photo 13-3).
3. Take out 2 screws [Q]. Disengage the protective cover and the differential pressure sensor unit.

Note:

※ Set the Differential pressure switch to 25 of the scale.

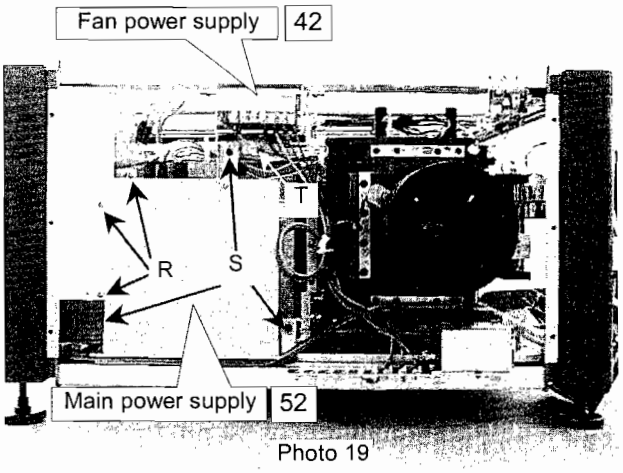


Photo 19

■Main power supply

- Remove the front panel (see page 5).

1. Take out 3 screws [R] of the duct cover.
2. Take out 3 screws [S] of the Main power supply.
3. Partially slide out the Main power supply.
4. Disengage the connectors (see Photo 20) and Main power supply.

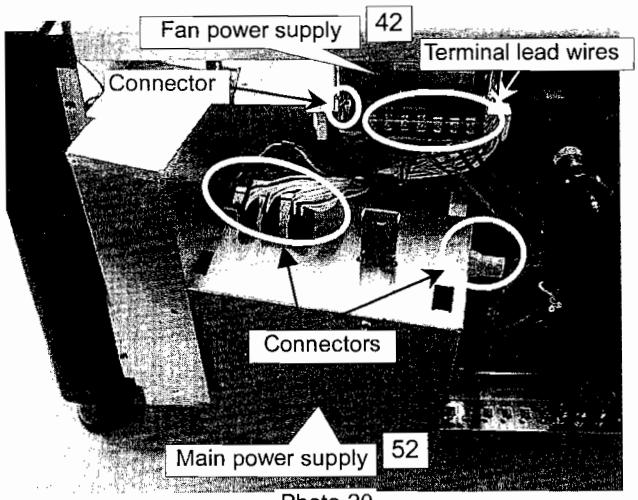


Photo 20

■Fan power supply

- Remove the front panel (see page 5).

1. Remove the protective cover from the terminals.
2. Disengage 5 lead wires from the terminals.
3. Disengage the connector of the power supply PWB.
4. Take out 1 screw [T] (see Photo 19).
5. Extract and remove the fan power supply.

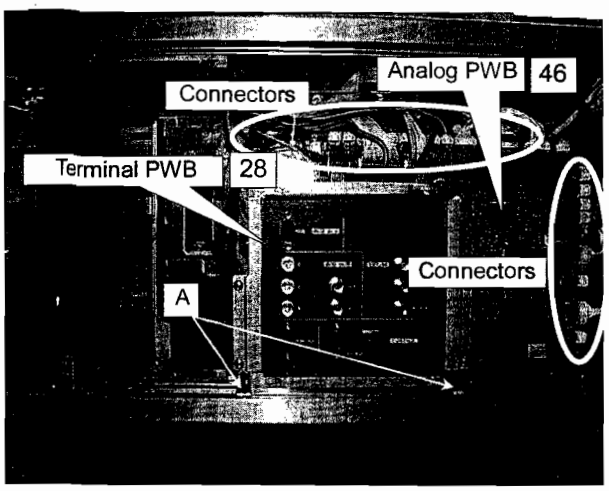


Photo 21

■Analog PWB

- Remove the Right panel and right panel fan (see page 5 and 6).

1. Take out 2 screws [A]
2. Disengage the analog PWB connectors.
3. Disengage the BNC and D-sub connectors between the analog and DPC P. W. boards (see Photo 22).

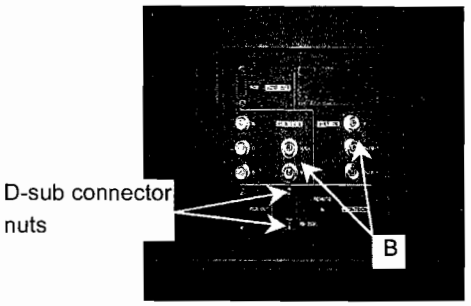


Photo 22

■Terminal board

1. Take out 2 screws [B].
2. Take off 2 D-sub connector stand offs.

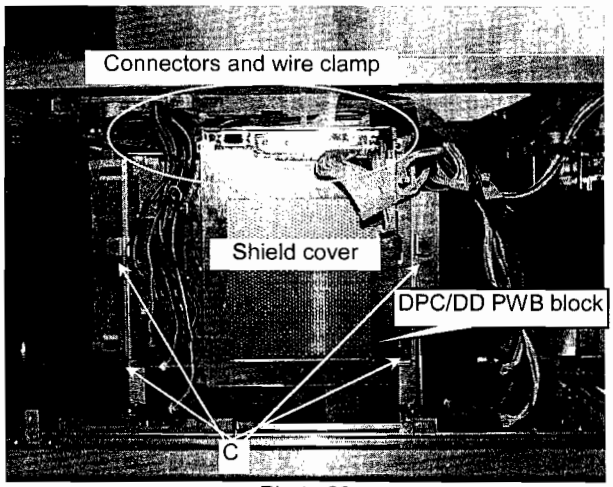


Photo 23

■DPC/DD PWB block

- Remove the Right panel, right panel fan and analog PWB (see page 5, 6 and Photo 23).

1. Take out 4 screws [C].
2. Disengage the connectors between the DPC and DD P. W. boards.
3. Disengage the wires from the wire clamp and remove the DPC/DD PWB block.

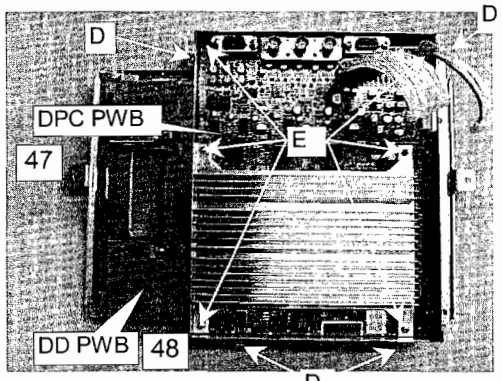


Photo 24

DPC/DD PWB block

■DPC PWB disassembly

1. Remove the shield cover.
2. Take out 4 screws [D] from the DPC/DD PWB block and separate the DPX shield bracket.

Note:

※Use care regarding board connector CN002.

3. Take out 6 screws [E] from the DPC shield bracket and separate the DPC PWB.

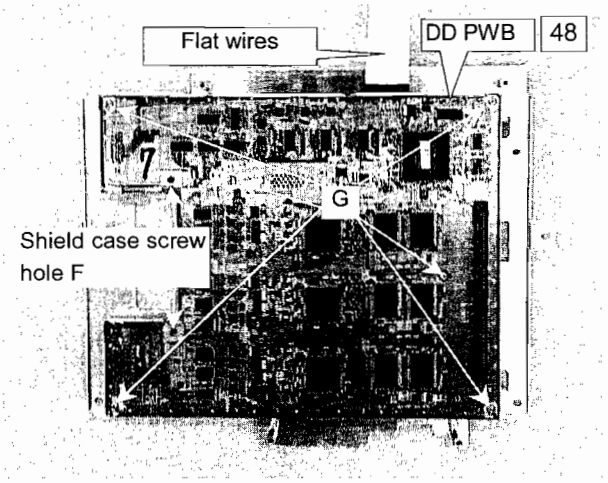


Photo 25

■DD PWB disassembly

● Separate the DPC PWB

1. Take out 2 screws [F] and remove the shield cover.
2. Take out 6 screws [G]. Remove the DD PWB and shield bracket.
3. Disengage the bracket wires and remove the DD PWB.

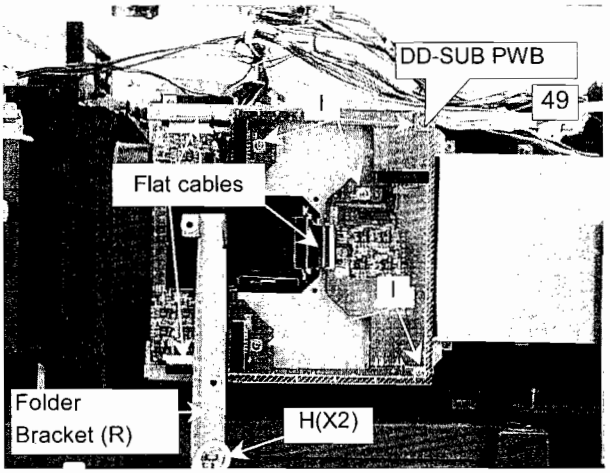


Photo 26

■DD-SUB PWB

● Remove the Right panel, right panel fan, analog PWB and DPC/DD PWB block (see page 5, 6 and 10).

1. Take out 2 screws [H] and remove the folder bracket (R).
2. Disengage 3 flat cables.

Note:

※The flat cables are directly connected to D-ILA panel. The D-ILA panel is easily damaged by static electricity. Be sure to use anti-static protection (e.g., wristband) when working with the flat cables, DD-SUB PWB and surrounding area.

3. Take out 5 screws [I] and remove the DD-SUB PWB.

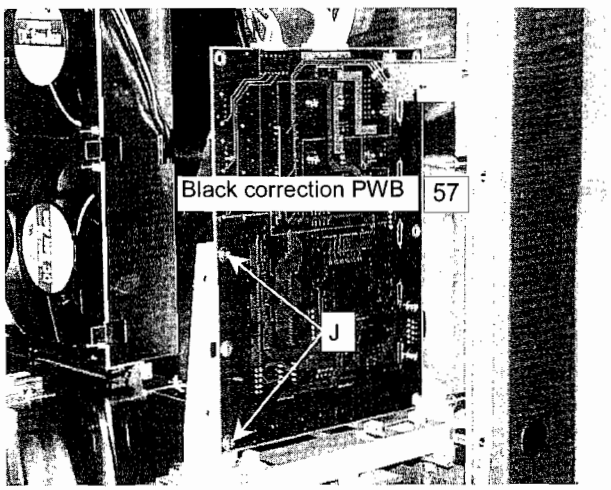


Photo 27

■Black correction PWB

● Remove the Right panel, right panel fan and analog PWB (see page 5, 6 and 10).

1. Take out 2 screws [J].
2. Disengage the connectors and remove the black correction PWB.

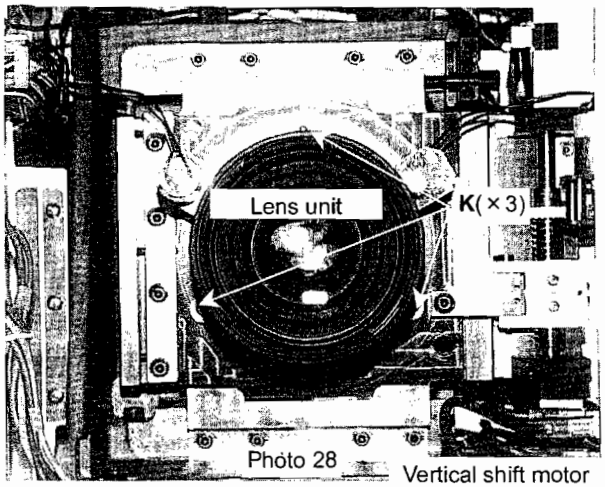


Photo 28

■Lens unit

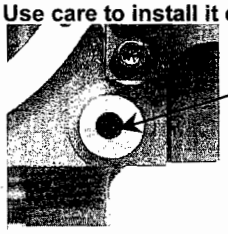
● Remove the front panel (see page 5).

1. Take out 2 screws and remove the lens guard (refer to lens instructions).
2. Take out 3 screws [K].
3. Remove the lens unit in the forward direction.

■Shift center lock pin

Note:

※ The shift center lock pin is removed at time of transport, when the lens shift function is not used, and when the OP unit is removed from the projector. Use care to install it correctly.



Removal state

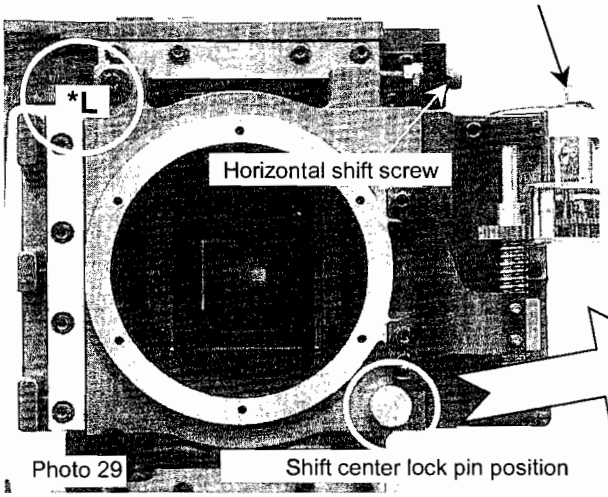
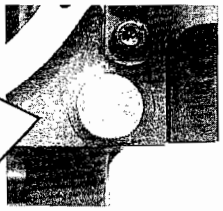


Photo 29 Shift center lock pin position


Installed state

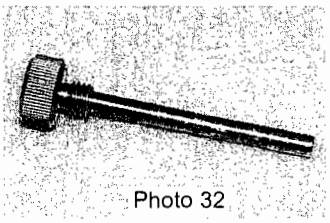


Photo 32
Shift center lock pin

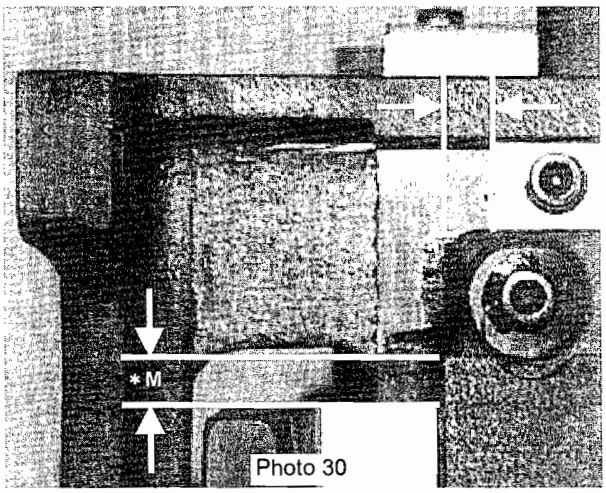


Photo 30

● Remove the front panel and lens unit (see page 5 and 12).

1. Turn vertical shift motor gear (*O in figure) by hand to where the OP unit front (*L) vertical shift margin (*M) is visually absent.
   Insert the shift center lock pin into the mounting hole.
   While gently pressing the pin inward, adjust the gear to where the pin can be inserted more deeply.

2. Adjust the horizontal shift screw to where the horizontal shift margin (*N in figure) is visually absent.
   While gently pressing the pin inward, adjust the screw to where the pin can be inserted more deeply.
   Turn the pin to where it is secured fully inward.

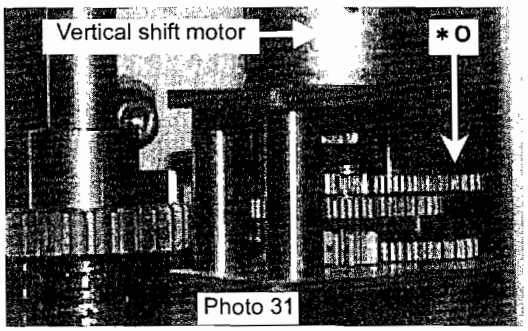


Photo 31

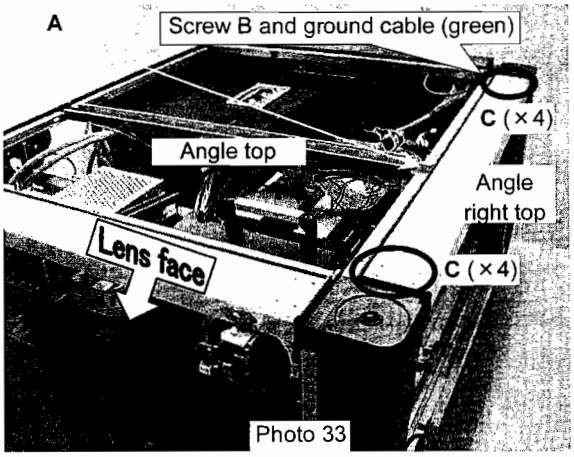


Photo 33

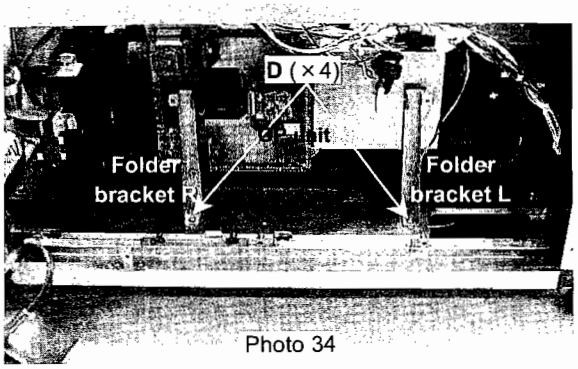


Photo 34

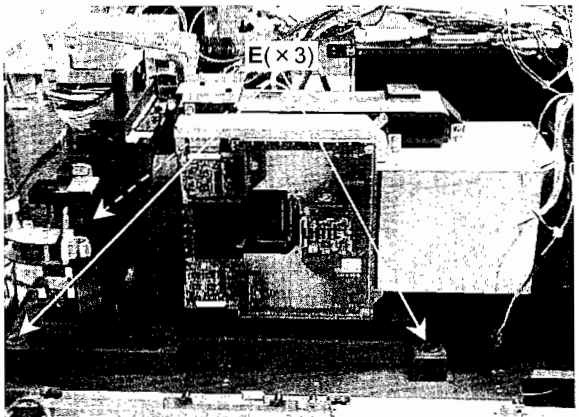


Photo 35

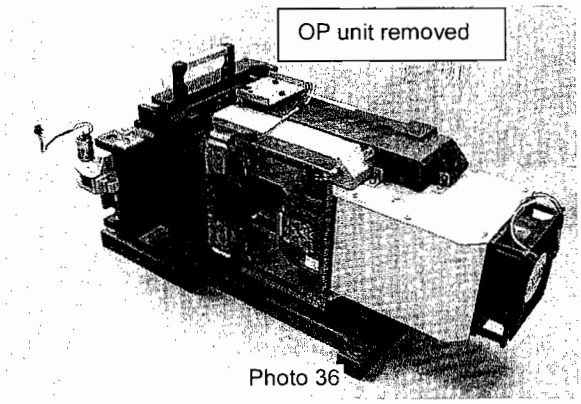


Photo 36

■OP unit

- Remove the front panel (see page 5).
- Remove the lens unit (see page 12).
- Remove the top, right and back panels (see page 5 and 6).
- Remove the lamp unit (recommended), although work is possible without removing the lamp unit, work is easier with the unit removed. (see page 8).
- Remove the analog, DPC, DD and DD-SUB P. W. boards (see page 10 and 11).

1. Take out 2 screws [A].
2. Remove the angle top.
3. Take out screw [B] and remove the ground cable.
4. Take out 8 screws [C] and remove the angle right top.
5. Take out 4 screws [D].
6. Remove the R and L folder brackets.
7. Take out 3 screws [E].
8. Remove the OP unit.

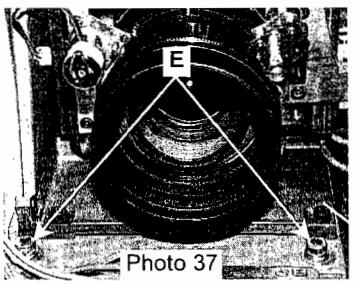


Photo 37

OP unit from lens side

OP unit from above

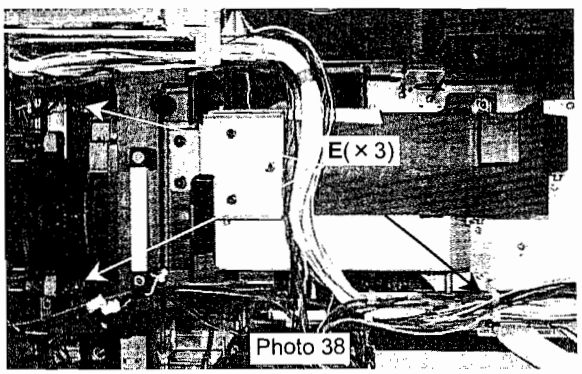


Photo 38

PARTS LIST(DLA-M5000LU DLA-M5000SCU)

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are crossed --- in the Parts No. columns will not be supplied .

List of major parts

	No.	REF	M5000LU Parts No.	M5000SCU Parts No.	Name of parts	Remarks
⚠	1	1801	LC10586-002B	←	Top panel	Refer to Page 6
⚠	2	0228	LC10586-001B	←	Bottom panel	No feet
	3	0222	LC40472-001A	←	Foot	Install on bottom panel
	4	0223	LC40479-001A	←	Foot spacer	Install on bottom panel
⚠	5	1501	LC10582-001B	←	Front panel	Refer to Page 6/no labels
⚠	6	1506	LC30279-001C	←	IR window	Install on front panel
⚠	7	1511	LC30945-001C	←	Lens sponge	Install on front panel
	8	1508	CM47752-004	←	Victor mark	Affix to front panel
	9	1509	QYNSS3000P	←	Pushnut	To fix Victor mark
⚠	10	2006	LC30332-007A	←	Caution label	Affix to front panel
⚠	11	1401	LC10587-001C	←	Back panel	Refer to Page 7/no labels, no filters
	12	1412	CM47752-004	←	Victor mark	Install on back panel
	13	1413	QYNSS3000P	←	Pushnut	To fix Victor mark
	14	1433	LC40672-001A	←	Cover	Install on back panel
	15	1434	CM44287-00C	←	Screw	To fix cover
⚠	16	1435	LC31132-001A	←	Control panel assembly	Including indicator, button
⚠	17	1422	LC30279-001C	←	IR window	Install on indicator
⚠	18	2005	LC30437-003C	←	VCCI-A label	Affix to back panel
⚠	19	1201	QAR0126-001	←	Fan (back panel)	Refer to Page 7, two fans are used
	20	1427	LC30930-001B	←	Filter cover	Install on back panel
	21					
⚠	22	1432	LC30505-004A	←	Filter	Install on back panel
⚠	23	2007	LC31088-001A	←	High-tension caution label	Affix to back panel
⚠	24	1701	LC10584-001D	LC10584-001D	Left panel	Refer to Page 6/no outlet grille
⚠	25	1705	LC20384-001B	←	Outlet grille	Install on left panel
	26	0309	PNH103843	←	Safety switch	Interlock switch
⚠	27	1601	LC10583-001C	←	Right panel	Refer to Page 6/no labels, no filters
⚠	28	1101	LC20393-001C	←	Terminal board	Install on right panel, main PCB
	29	1115	LC40567-002B	←	Adaptor cover	Install on terminal board
	30	1116	QYSBSG3008M	←	Screws	To fix adaptor cover/two screws are used
⚠	31	2004	LC31217-005A	LC31217-008A	Rating label	Affix on right panel
⚠	32	0824	QAR0126-001	←	Fan (right panel)	Refer to Page 7/two fans are used
	33	1901	LC30795-001B	←	Filter cover	Install on right panel
	34					
⚠	35	1907	LC30505-004A	←	Filter	Install on right panel
⚠	36	1305	PNH103566	←	Power switch (circuit breaker)	Refer to Page 6
	37	0401	LC40439-002A	LC40439-003A	OP unit	Refer to Page 14
⚠	38	0403	QAR0126-001	←	OP unit fan (1)/(2)	Install at 2 locations on OP unit
⚠	39	0501	QLL0072-003	←	Lamp unit	Refr to Page 9
⚠	40	0518	QAR0129-001	←	Lamp fan (Scirocco fan)	Refer to Page 8/no gasket
⚠	41	0521	LC30815-003B	←	Gasket	Refer to Page 8/affix to lamp fan
⚠	42	0701	QAL0216-001	←	Fan power unit	Refer to Page 10
⚠	43	0601	QAL0217-002	←	Lamp power unit (ALPS)	Refer to Page9
⚠	44	0608	QAL0218-001	←	Igniter	Refer to Page 9
⚠	45	1327	QSW0860-001	←	Microscopic differential sensor	Refer to Page 10
⚠	46	0102	SXA-1004A	←	Analog PCB	Refer to Page 11
⚠	47	0113	SXA-1202A	←	DPC PCB	Refer to Page 11
⚠	48	0111	SXA-1303A	←	DD PCB	Refer to Page 12
⚠	49	0107	SXA-3301A	←	DD-SUB PCB	Refer to Page 12
⚠	50	0103	SXA-7001A	←	Operation/remote control PCB	On back panel side
⚠	51	0104	SXA-8002A	←	Remote control light-receiving PCB	On front panel side
⚠	52	0119	SXA-9004A	←	Main power PCB (LVPS)	Refer to Page 10/install inside power unit
⚠	53	0120	SXA-0P021B	←	Standby power module PCB	Module PCB on main power PCB
⚠	54	0121	SXA-0P002B	←	Main drive module PCB	Module PCB on main power PCB
⚠	55	0122	SXA-0P003B	←	Active filter module PCB	Module PCB on main power PCB
⚠	56	0811	QAR0125-001	←	Fan (system power)	Install on power unit
⚠	57	0112	QAL0220-001	←	Black correction PCB	Refer to Page 12

List of packed parts

	No.	REF	M5000LU Parts No.	M5000SCU Parts No.	Name of parts	Remarks
⚠	1	1320	QMPE170-335-R	←	Power cord	
	2	2101	LC30236-001A	←	Polyethylene bag (A)	
	3	2103	LC10592-002A	LC10592-002A	Cushion assembly	
	4	2105	LC10593-002A	LC10593-002A	Packing case assembly	
	5	2106	LC30810-010A	LC30810-013A	Packing label	Affix to packing case assembly
	6	2107	CP30903-001	←	Joint	
	7	2108	CP30371-00E	←	Band	
	8	2110	LC40168-002A	←	Shock watch	Affix to packing case assembly
	9	2201	BT-5102-1	BT-51021-1	Warranty	
	10	2203	LC30384-001A	←	Desiccant	
⚠	11	2205	LCT0975-001A	LCT0978-001A	Instruction manual	
	12	2207	QPC02503510P	←	Polyethylene bag (B)	
	13	2209	RM-M4000G	←	Remote controller	
	14	2213	QAM0247-001	←	Remote control cable	
	15	2211	R6PY/2S	←	Battery	
	16	2215	QPA03504510P	←	Polyethylene bag (C)	

PARTS LIST(DLA-M5000LE DLA-M5000SCE)

List of major parts

	No.	REF	M5000LE Parts No.	M5000SCE Parts No.	Name of parts	Remarks
⚠	1	1801	LC10586-002B	←	Top panel	Refer to Page 6
⚠	2	0228	LC10586-001B	←	Bottom panel	No feet
	3	0222	LC40472-001A	←	Foot	Install on bottom panel
	4	0223	LC40479-001A	←	Foot spacer	Install on bottom panel
⚠	5	1501	LC10582-001B	←	Front panel	Refer to Page 6/no labels
⚠	6	1506	LC30279-001C	←	IR window	Install on front panel
⚠	7	1511	LC30945-001C	←	Lens sponge	Install on front panel
	8	1508	CM47752-004	←	Victor mark	Affix to front panel
	9	1509	QYNSS3000P	←	Pushnut	To fix Victor mark
⚠	10	2006	LC30332-007A	←	Caution label	Affix to front panel
⚠	11	1401	LC10587-001C	←	Back panel	Refer to Page 7/no labels, no filters
	12	1412	CM47752-004	←	Victor mark	Install on back panel
	13	1413	QYNSS3000P	←	Pushnut	To fix Victor mark
	14	1433	LC40672-001A	←	Cover	Install on back panel
	15	1434	CM44287-00C	←	Screw	To fix cover
⚠	16	1435	LC31132-001A	←	Control panel assembly	Including indicator, button
⚠	17	1422	LC30279-001C	←	IR window	Install on indicator
	18	2005				
⚠	19	1201	QAR0126-001	←	Fan (back panel)	Refer to Page 7, two fans are used
	20	1427	LC30930-001B	←	Filter cover	Install on back panel
	21					
⚠	22	1432	LC30505-004A	←	Filter	Install on back panel
⚠	23	2007	LC31088-001A	←	High-tension caution label	Affix to back panel
⚠	24	1701	LC10584-001D	LC10584-001D	Left panel	Refer to Page 6/no outlet grille
⚠	25	1705	LC20384-001B	←	Outlet grille	Install on left panel
	26	0309	PNH103843	←	Safety switch	Interlock switch
⚠	27	1601	LC10583-001C	←	Right panel	Refer to Page 6/no labels, no filters
⚠	28	1101	LC20393-001C	←	Terminal board	Install on right panel, main PCB
	29	1115	LC40567-002B	←	Adaptor cover	Install on terminal board
	30	1116	QYSBSG3008M	←	Screws	To fix adaptor cover/two screws are used
⚠	31	2004	LC31217-006A	LC31217-009A	Rating label	Affix on right panel
⚠	32	0824	QAR0126-001	←	Fan (right panel)	Refer to Page 7/two fans are used
	33	1901	LC30795-001B	←	Filter cover	Install on right panel
	34					
⚠	35	1907	LC30505-004A	←	Filter	Install on right panel
⚠	36	1305	PNH103566	←	Power switch (circuit breaker)	Refer to Page 6
	37	0401	LC40439-002A	LC40439-003A	OP unit	Refer to Page 14
⚠	38	0403	QAR0126-001	←	OP unit fan (1)/(2)	Install at 2 locations on OP unit
⚠	39	0501	QLL0072-003	←	Lamp unit	Refr to Page 9
⚠	40	0518	QAR0129-001	←	Lamp fan (Scirocco fan)	Refer to Page 8/no gasket
⚠	41	0521	LC30815-003B	←	Gasket	Refer to Page 8/affix to lamp fan
⚠	42	0701	QAL0216-001	←	Fan power unit	Refer to Page 10
⚠	43	0601	QAL0217-002	←	Lamp power unit (ALPS)	Refer to Page9
⚠	44	0608	QAL0218-001	←	Igniter	Refer to Page 9
⚠	45	1327	QSW0860-001	←	Microscopic differential sensor	Refer to Page 10
⚠	46	0102	SXA-1004A	←	Analog PCB	Refer to Page 11
⚠	47	0113	SXA-1202A	←	DPC PCB	Refer to Page 11
⚠	48	0111	SXA-1303A	←	DD PCB	Refer to Page 12
⚠	49	0107	SXA-3301A	←	DD-SUB PCB	Refer to Page 12
⚠	50	0103	SXA-7001A	←	Operation/remote control PCB	On back panel side
⚠	51	0104	SXA-8002A	←	Remote control light-receiving PCB	On front panel side
⚠	52	0119	SXA-9004A	←	Main power PCB (LVPS)	Refer to Page 10/install inside power unit
⚠	53	0120	SXA-0P021B	←	Standby power module PCB	Module PCB on main power PCB
⚠	54	0121	SXA-0P002B	←	Main drive module PCB	Module PCB on main power PCB
⚠	55	0122	SXA-0P003B	←	Active filter module PCB	Module PCB on main power PCB
⚠	56	0811	QAR0125-001	←	Fan (system power)	Install on power unit
⚠	57	0112	QAL0220-001	←	Black correction PCB	Refer to Page 12

List of packed parts

	No.	REF	M5000LE Parts No.	M5000SCE Parts No.	Name of parts	Remarks
⚠	1	1320	QMPE170-335-R	←	Power cord	
	2	2101	LC30236-001A	←	Polyethylene bag (A)	
	3	2103	LC10592-002A	LC10592-002A	Cushion assembly	
	4	2105	LC10593-002A	LC10593-002A	Packing case assembly	
	5	2106	LC30810-011A	LC30810-014A	Packing label	Affix to packing case assembly
	6	2107	CP30903-001	←	Joint	
	7	2108	CP30371-00E	←	Band	
	8	2110	LC40168-002A	←	Shock watch	Affix to packing case assembly
	9	2201				
	10	2203	LC30384-001A	←	Desiccant	
⚠	11	2205	LCT0976-001A	LCT0979-001A	Instruction manual	
	12	2207	QPC02503510P	←	Polyethylene bag (B)	
	13	2209	RM-M4000G	←	Remote controller	
	14	2213	QAM0247-001	←	Remote control cable	
	15	2211	R6PY/2S	←	Battery	
	16	2215	QPA03504510P	←	Polyethylene bag (C)	

JVC®

VICTOR COMPANY OF JAPAN, LIMITED
PROJECTION & SYSTEM NETWORK BUSINESS UNIT 1644 Shimoturuma, Yamato-city, Kanagawa-prefecture, 242-8514, Japan

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DLA-M5000LU / DLA-M5000LE
DLA-M5000SCU / DLA-M5000SCE

V29979

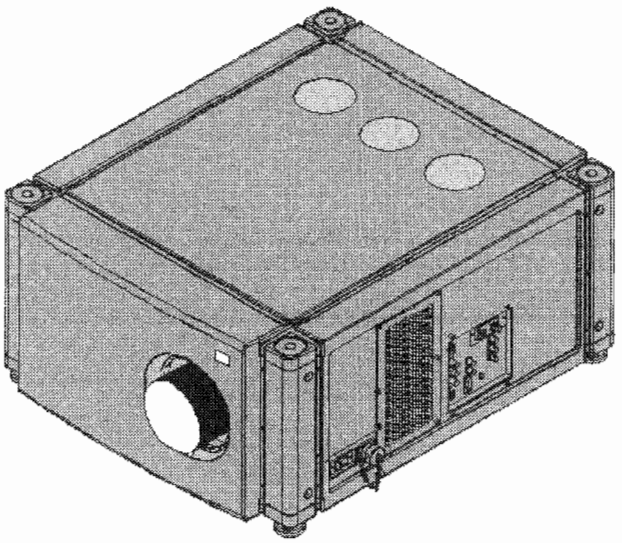
JVC

SERVICE MANUAL

D-ILA PROJECTOR

BASIC CHASSIS
XA

DLA-M4000LU
DLA-M4000LE



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No. 51666
Nov. 1999

SPECIFICATIONS

GENERAL

Type	D-ILA SUPER PROJECTOR
Dimensions (W×H×D)	27-1/16" × 14-1/2" - 16-9/16" × 31-1/4" [68.7cm × 36.8cm - 42.0cm × 37.5cm] (W : excludes protruding parts)
Mass	176lbs [80kg]
Power requirements	U model AC 220V - AC 240V 60Hz E model AC 200V - AC 240V 50Hz/60Hz
Power Consumption	12A
Operating temperature	+5℃ – +40℃
Operating humidity	0% – 90% (no-condensation)
Storage temperature	-5℃ – +60℃
Storage humidity	0% – 90% (no-condensation)
Remote control unit operation	**RM-M4000G** Distance : 10m Angle: Horizontal = ±50°, Vertical = ±15°
Mass	167g (includes dry cell battery)
Accessories	Remote control unit (RM-M4000G) × 1 Dry cell battery (size : UM-3/AAA/R03) × 2 Wired remote cable (φ3.5mm stereo : 15m) × 1 Power code (3-pin : 3.35m) × 1
Options	Projection lens 1.5× electrical zoom lens [50% fix shift]

OPITICS

Image projection system	3 D-ILA devices · 1 Lens · 3 primary-color shutters system
D-ILA device	0.9-inch(2.3cm) [H1365 × V1024 pixels] × 3 *measured diagonally [Total : 4,193,280 pixels]
Light lamp	Xenon lamp 1.6kW
Projection angle	**Vertical** : max. ±4° **Horizontal** : max. ±5°

ELECTRIC

Color system	NTSC3.58 / NTSC4.43 / PAL / SECAM (Automatic / Manual)
Resolution	**Video input (4:3)** : horizontal 1000TV lines **RGB input** : H1365 × V1024 dots (S-XGA full resolution)
Contrast ratio	350 : 1
Scanning frequency	**Horizontal** : 15kHz – 82kHz **Vertical** : 50Hz – 78Hz

INPUT CONNECTORS

Video IN	Y/PB(B-Y)/PR(R-Y)
Y·PB/B-Y·PR/R-Y	Hi-vision base-band signal / Color-differential component signal BNC connector × 3
Y	1Vp-p 75Ω 3-value sync. / negative sync.
PB / B-Y	±0.35Vp-p 75Ω / 0.7Vp-p 75Ω
PR / R-Y	±0.35Vp-p 75Ω / 0.7Vp-p 75Ω
COMPUTER	select COMPUTER IN-1 / 2
RGB IN-1	
	Analog RGB signal mini D-sub 15-pin × 1 **R** : 0.7Vp-p 75Ω **G** : 0.7Vp-p 75Ω **Sync. on G** : 1Vp-p 75Ω negative **B** : 0.7Vp-p 75Ω **Sync.(H/Cs·V)** : 1 – 5Vp-p high impedance *Sync. mode : automatic selection
RGB IN-2	
	Analog RGB signal / Hi-vision base-band (RGB) signal / Color-differential component signal / External sync. signal BNC connector × 5
R	0.7Vp-p 75Ω
G	0.7Vp-p 75Ω
	Sync. on G : 1Vp-p 75Ω negative
B	0.7Vp-p 75Ω
H / Cs (HD)	1 – 5Vp-p high impedance positive/negative
V (VD)	1 – 5Vp-p high impedance positive/negative
	*Sync. mode : automatic selection
Video Option Required Optional Video Board (PK-G1101D)	select VIDEO·Y/C required PK-G1101D or Y/PB(B-Y)/PR(R-Y)
Y / C	Luminance/Chroma separate video signal mini DIN 4-pin × 1 **Y** : 1Vp-p 75Ω negative sync. **C** : 0.286Vp-p(burst) 75Ω [NTSC] 0.3Vp-p(burst) 75Ω [PAL]
VIDEO	Composite video signal BNC connector × 1 1Vp-p 75Ω negative sync.

OUTPUT CONNECTORS

RGB OUT	Analog RGB signal mini D-sub 15-pin × 1 **R** : 0.7Vp-p 75Ω **G** : 0.7Vp-p 75Ω **Sync. on G** : 1Vp-p 75Ω negative **B** : 0.7Vp-p 75Ω **Sync.(H/Cs·V)** : TTL level positive / negative *COMPUTER line output (same for input)

CONTROL CONNECTORS

RS-232C	D-sub 9-pin × 1
REMOTE	φ3.5mm mini-jack × 1

Design & specification are subject to change without notice.

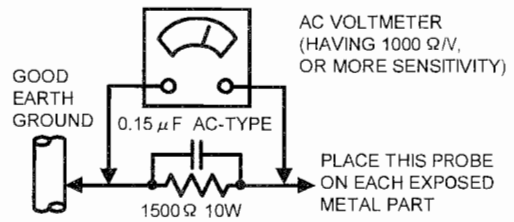
SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Use isolation transformer when hot chassis.**
   The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.
5. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
   Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.
   If above note will not be kept, a fuse or any parts will be broken.
6. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
7. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
1. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
9. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.
10. **Isolation Check**
    (Safety for Electrical Shock Hazard)
    After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

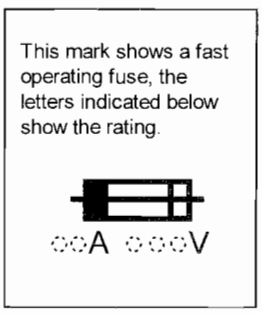
(1) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second.
(. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

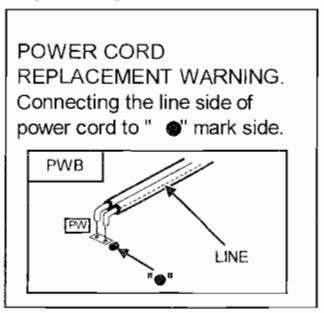
(2) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

● Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



11. **High voltage hold down circuit check.**
    After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
    See item "**How to check the high voltage hold down circuit**".





■ Warning and caution labels

Labels advising of warning and caution are affixed on and in various locations of the product. Take careful notice of these during service and inspection.

⚠ WARNING Risk of lethal or otherwise serious personal injury.
⚠ CAUTION Risk of personal injury and damage to the product.

Class	Pictorial	Label advisory	Location
⚠WARNING	High voltage	Never open any cover on the projector except the lamp and filter covers. Dangerous electrical voltage inside the projector.	Bottom of rear cover
⚠CAUTION	Hot, shock hazard	Do not insert foreign objects into the ventilation holes as this can result in fire or electrical hazards. Do not block the ventilation holes as this may cause the internal temperature to rise and possibly result fire. When the inside of the unit requires cleaning, consult your nearest JVC dealer or service center.	Bottom of rear cover
⚠CAUTION	High brightness	Never look into the lens while the projector is on. There is danger of eye damage.	Right lower side of front cover lens hole
⚠CAUTION	High voltage	Caution high voltage	Internal Igniter
⚠CAUTION	High voltage	Caution high voltage	Internal Lamp power unit

■ Additional cautionary items

- **High voltage of about 35 kV is applied for lighting the lamp.** During adjustments and other work with the cover removed, extreme care is needed to avoid electric shock.
- Use care to avoid touching the fan or safety switch terminals during work with the cover removed.
- Select a stable, horizontal work site to prevent dropping the product and components.
- Use the power cord and interface cable supplied with the product.

Before starting work, be sure to also check the safety notices contained in the instruction manual.

TECHNICAL INFORMATION

LED INDICATIONS

The LED operations are as follows.

■OPERATE LED

Lighted: Power on mode in progress.
Extinguished: Mode other than above.

■STAND-BY LED

Lighted: Stand-by mode in progress.
Flashing: Cool down mode in progress
Extinguished: Mode other than above.

■LAMP LED

Lighted: Lamp replacement time near (less than 100 hours remain, i.e., used approximately 900 hours).
At power on, message appears by the on-screen display for about 2 minutes advising to "LAMP REPLACE" .
Flashing: Lamp end of life (approx. 1000 hours), power on inhibited.
Extinguished: Mode other than above (lamp anomaly absent).

■TEMP LED

Flashing: Internal temperature abnormally high (shift to emergency mode).
Extinguished: Internal temperature normal.

■EMERGENCY LED

Flashing: Abnormality has occurred.
Extinguished: Anomaly absent.

◆OPERATE LED and STAND-BY LED states in each mode

Mode	OPERATE	STAND-BY
Stand-by	**Extinguished**	**Lighted**
Power on	**Lighted**	**Extinguished**
Cool down	**Extinguished**	**Flashing**
Emergency	**Extinguished**	**Extinguished**
High temperature emergency	**Extinguished**	**Extinguished**

※Cool down time for this model is about 10 minuites.
※Emergency cool down time is about 20 seconds.

EMERGENCY MODE

The emergency mode is entered in the following events.

1. **Fan lock**
   (One or more cooling fans fail to rotate.)
2. **Set overheats**
   (The DD board temperature sensor (IC710) exceeds 49°C)

When the emergency mode is entered, the lamp is cut off and the Emergency LED flashes.
Power on and other operations are inhibited until reset by switching the main power off or disconnecting from the outlet.

If the lamp fails to light from the standby mode (error log: E01) or the lamp extinguished during power on (error log: E06, e.g., lamp power supply abnormal, cover switch open, thermostat operates, etc.), the standby mode is returned without entering the emergency mode.

COOLING FAN CONTROL

A microprocessor controls cooling fans as follows even the cool-down mode of this set is for 20 seconds.

1. **After main power on; fan rotates for 10 minutes.**
   (Prevents darkening from latent heat if AC power is lost during lamp operation.)

2. **After power down; fan rotates for 10 minutes.**
   (Normal cool-down operation.)

3. **Lamp fails to light after more than 10 minutes pass since main power on; 20 seconds cool-down, then standby.**
   (Heat from lamp is absent, but E01 is recorded.)

4. **Lamp fails to light after less than 10 minutes pass since main power on; fan rotates for 10 minutes to compensate for heat since main power startup.**
   (Since operation is discontinued, fan rotates for 10 minutes after lighting failure. E1 is logged.)

POWER ON CONTROL

A microprocessor sets the cool-down mode for 20 seconds. Even during cool-down, power on is enabled under the following conditions.

1. **Directly after main power on.**

2. **Power down / lamp failure emergency; after 20 seconds elapse.**

SPECIFIC SERVICE INSTRUCTIONS

Installation cautions

■General

●The equipment is provided with 9 fans, including 1 for the power supply unit (LVPS), 1 for the lamp power unit (ALPS) and 1 lamp fan. Obstructing the fan intakes and exits will impair the cooling efficiency and risks overheating. When the internal temperature exceeds the reference, a temperature sensor functions to cutoff lamp power. Therefore, use care not to block the fan intake and exits, and provide adequate space around the perimeter of the machine.

●Do not set the machine on its side and avoid tilting it left or right.

■Input Signal

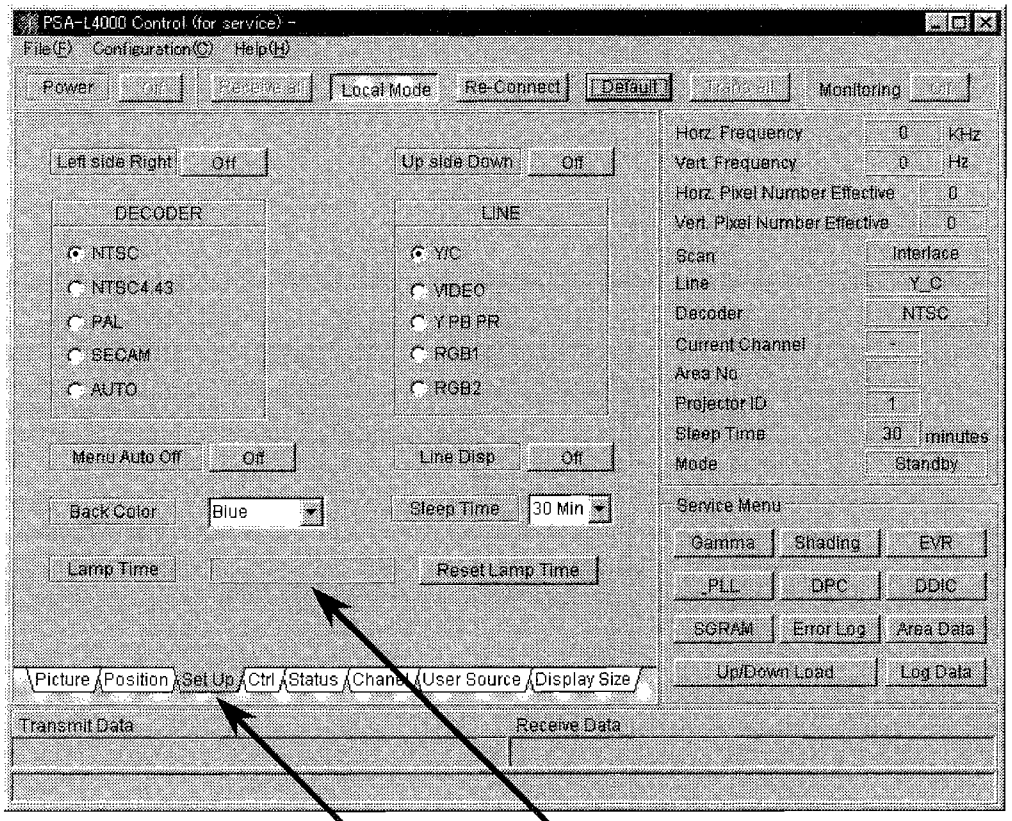
Normal input signals are indicated in the Instruction Book.
Additional signals may be displayed with required adjustment.
Also some video board may be required adjustment even indicated in the Instruction Book.

ANALOG PWB ASS'Y replacement caution

Be sure to re-write the lamp time after replacing the ANALOG PWB ASS'Y.

■How to Re-write the Lamp Time

(1) Take a note of the Lamp Time before replace the ANALOG PWB ASS'Y
(2) Set the projector to the stand-by mode.



(3) Start the PSA3 software and open the Set Up page.
(4) Press Ctrl+Alt+Shift, holding these button, click lamp time display box by **right** button.
(5) Back color of the box turns white, then input the noted lamp times in hour.
(6) Press Return to send data to the projector. It is impossible to input minute.

Lamp notes

■ Important general cautions

●⚠ The xenon lamp emits high intensity white, ultraviolet and infrared light.
Do not look directly at the light during service. Also, do not touch the lamp directly as it presents a burn hazard.

●⚠ The lamp is filled with high-pressure xenon gas. Use ample care when handling. Particularly avoid impacts to the sapphire glass.

■ Replacement cautions

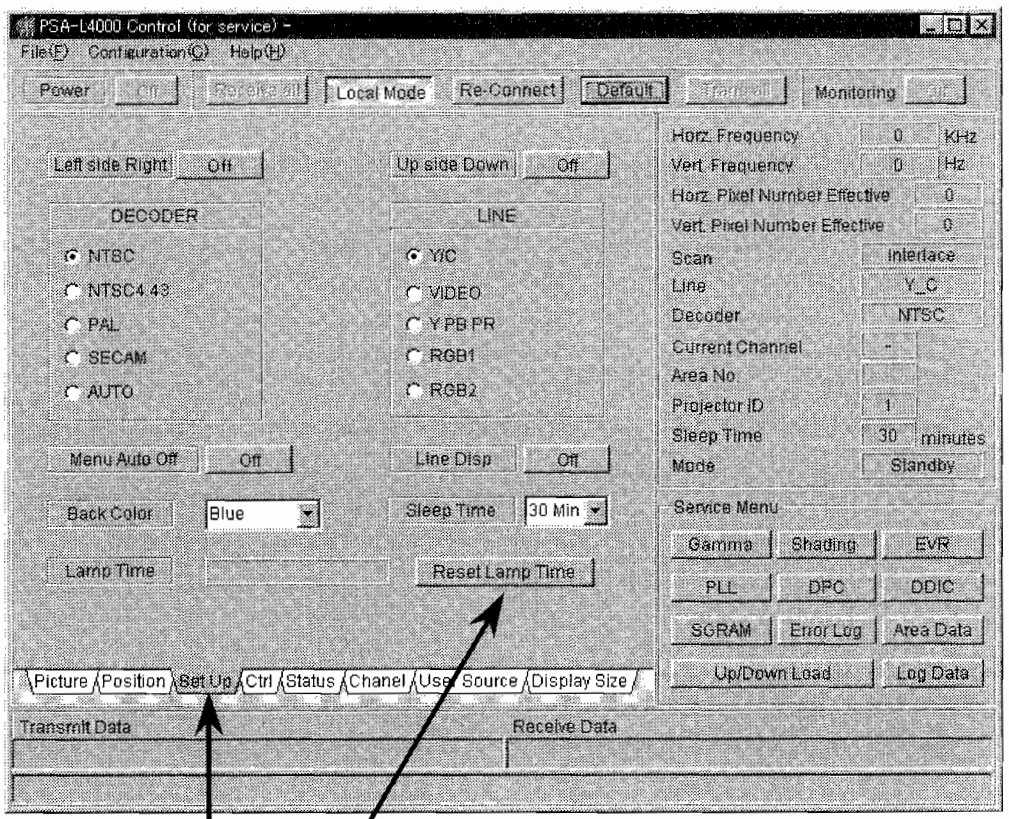
●⚠ When handling the lamp unit, be sure to hold the unit by the top and observe the side shutter is closed.
Do not raise the shutter except when installing the lamp unit in the projector.

●⚠ There is risk of injury if the projector is placed in a location where work is difficult.
Set the projector in a stable and sufficiently large work site for replacement work.

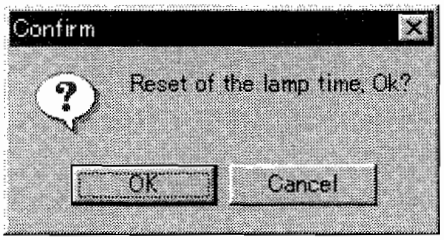
●⚠ Do not replace the lamp unit immediately after using the projector.
The unit is very hot and there is risk of burn injury.
Allow plenty of time for cooling before starting replacement work.

●⚠ Switch off the main power and disconnect the power cord from the outlet before replacing the lamp unit.
There is danger of injury and electric shock from attempting work while power is connected.

■ How to Reset the Lamp Time



(1) Set the projector to the stand-by mode.
(2) Start the PSA3 software and open the Set Up page.
(3) Hold down the **Shift key** and click the Reset Lamp Time button to display the following message.



(4) To reset the lamp time, click OK. (When not resetting the lamp time, click Cancel.)

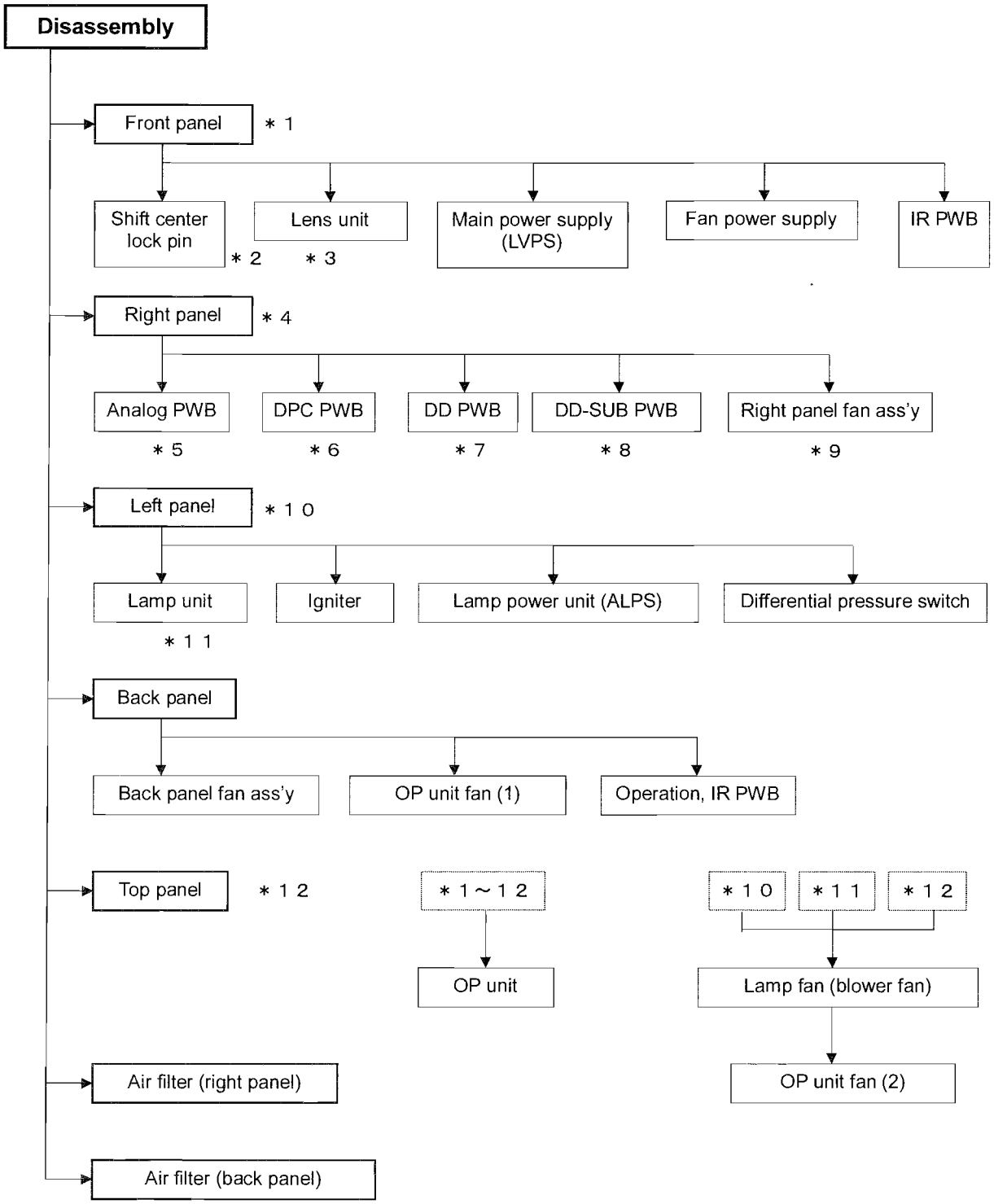
Disassembly

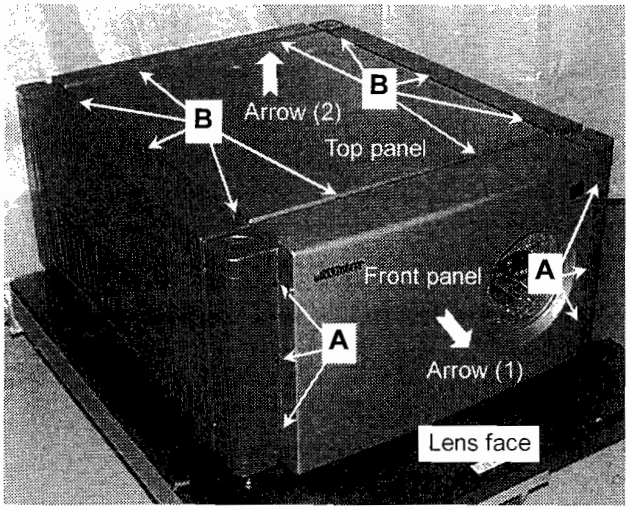
Notes

※Before starting work, confirm the power cord is disconnected from the AC outlet.

※After the power has been switched off, the lamp remains quite hot. Allow sufficient time for the lamp to cool before starting work.

■Work flowchart



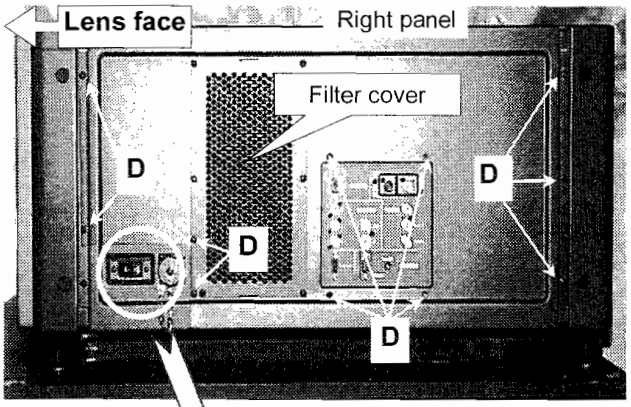


■Front panel

1. Take out 6 screws [A].
2. Remove the front panel in the arrow (1) direction.

■Top panel

1. Take out 10 screws [B].
2. Remove the top panel in the arrow (2) direction.

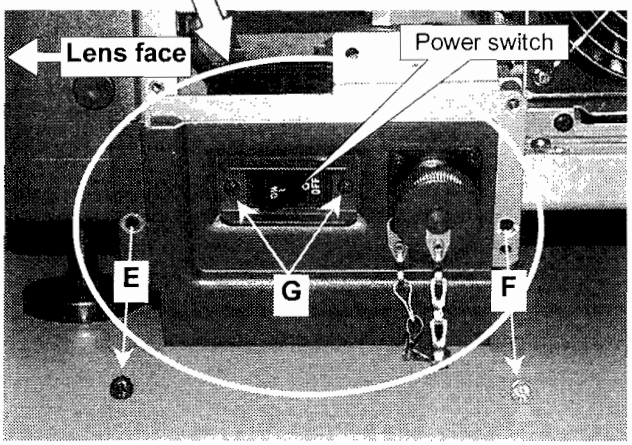


■Right panel

1. Take out 4 screws [C].
2. Take out 7 screws [D].
3. Remove the right panel.

■Air filter(right panel)

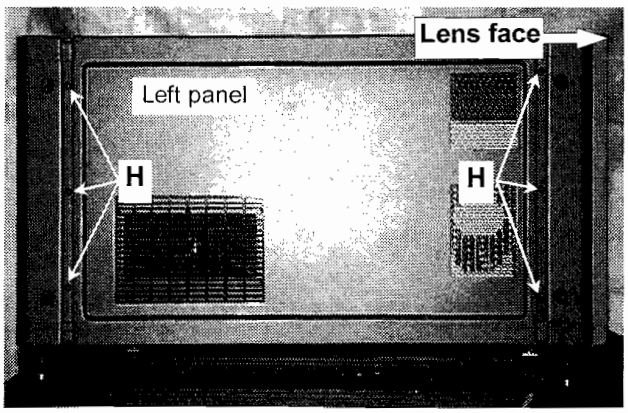
1. Take out 6 filter cover screws.
2. Remove the filter cover.
3. Take out, clean or replace the filter (sponge).



■Power switch

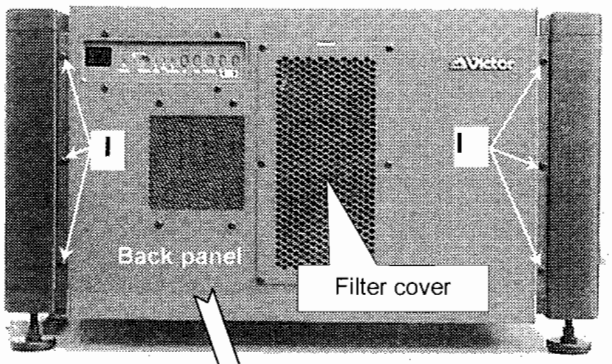
● Remove the right panel (see above).

1. Take out screws [E] and [F].
2. Take out 2 screws [G].
3. Remove the Power switch.



■Left panel

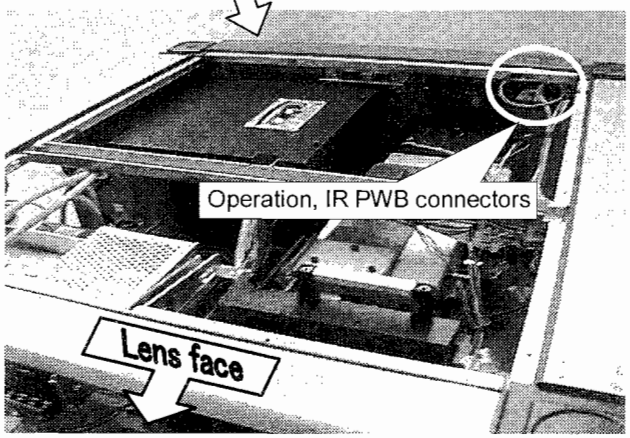
1. Take out 6 screws [H].
2. Remove the left panel.



■Back panel

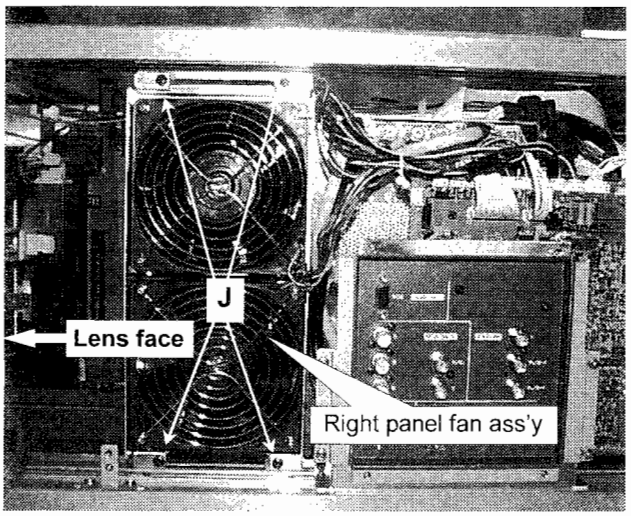
●Remove the Top or Left panel (see page 1-8).

1. Disengage the operation, IR PWB connectors in 3 locations (see figure).
2. Take out 6 screws [I] of the back panel.
3. Remove the back panel.



■Air filter (back panel)

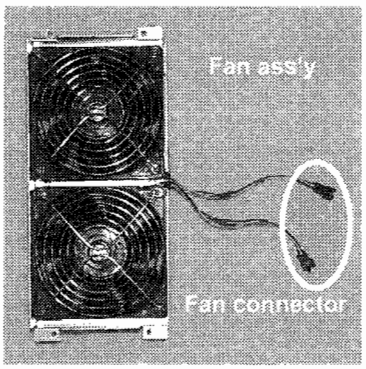
1. Take out 6 screws of the air filter (see figure).
2. Remove the filter cover.
3. Take out, clean or replace the filter (sponge).

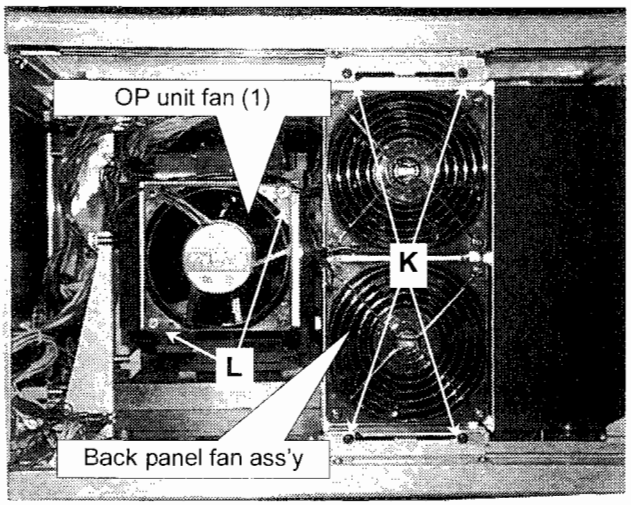


■Right panel fan ass'y

●Remove the right panel (see page 1-8).

1. Disengage the fan connectors in 2 locations (see figure).
2. Take out 4 screws [J].
3. Remove the right panel fan ass'y (fan can be replaced separately).





■Back panel fan ass'y

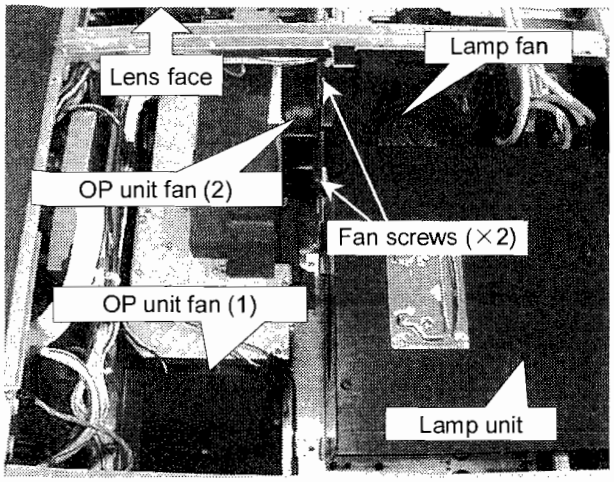
●Remove the back panel (see above).

1. Disengage connector (see figure).
2. Take out 4 screws [K].
3. Remove the back panel fan ass'y (fan can be replaced separately).

■OP unit fan (1)

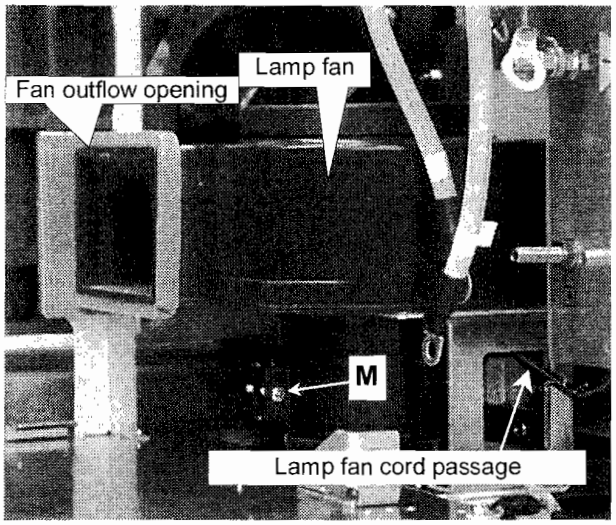
●Remove the back panel (see above).

1. Disengage connector (see figure).
2. Take out 4 screws [L].
3. Remove the OP unit fan (1).



■OP unit fan (2)

●Remove the lamp unit (see page 1-11).
●Remove the lamp fan (see figure).
1. Take out 2 fan screws.
2. Remove the OP unit fan (2)

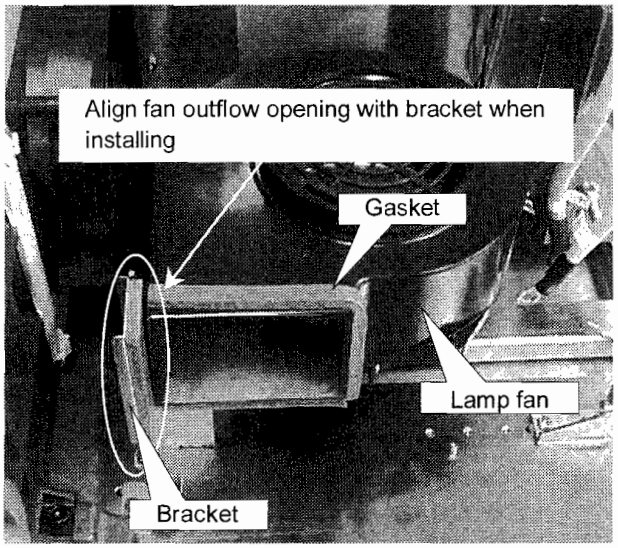


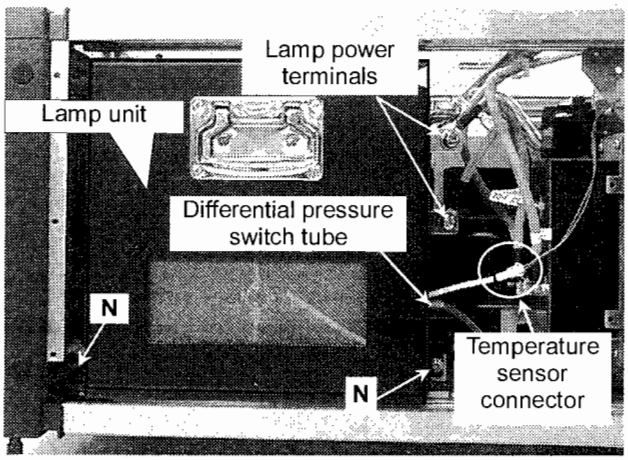
■Lamp fan (blower fan)

● Remove the Top and Left panels (see page 1-8).
Although work is possible without removing the Top panel, removing it is recommended for easier access.
1. Remove the lamp unit (see page 1-11).
2. Disengage the lamp fan cord connector.
3. Loosen 1 screw [M].
4. Raise and remove the lamp fan.

Notes:

※ When installing the lamp fan, observe the fan outflow opening angle (see figure).
※When replacing the lamp fan, attach a new gasket to the lamp fan.





■Lamp unit

●Remove the Left panel (see page 1-8).

1. Disengage cables connected to the lamp power terminals in 2 locations.

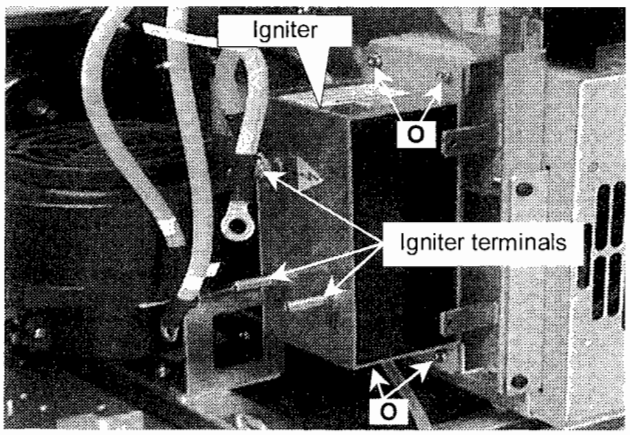
Note:

※Use care regarding polarity when reconnecting.

2. Disengage the differential pressure switch tube.
3. Disengage the temperature sensor connector.
4. Take out 2 screws [N].
5. Pull out the lamp unit.

Note:

※When reinstalling, raise the shutter at the right side of the unit and insert. After inserting, confirm that the shutter is open.



■Igniter

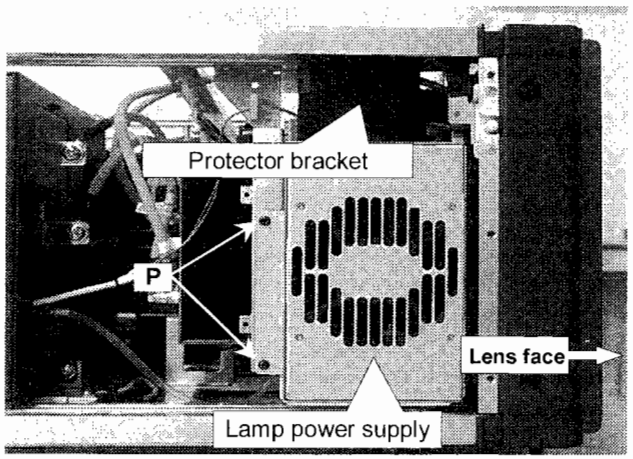
●Remove the Left panel (see page 1-8).

1. Disengage cables connected to the igniter terminals in 3 locations

Note:

※Use care regarding polarity when reconnecting.

2. Take out 4 screws [O].
3. Remove the igniter.



■Lamp power supply (ALPS)

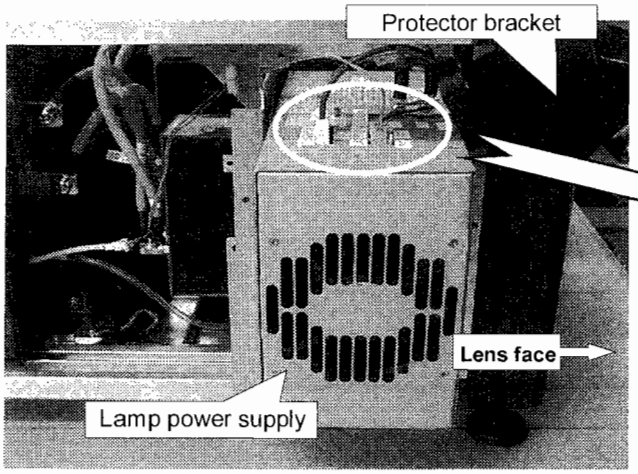
● Remove the Right panel (see page 1-8)

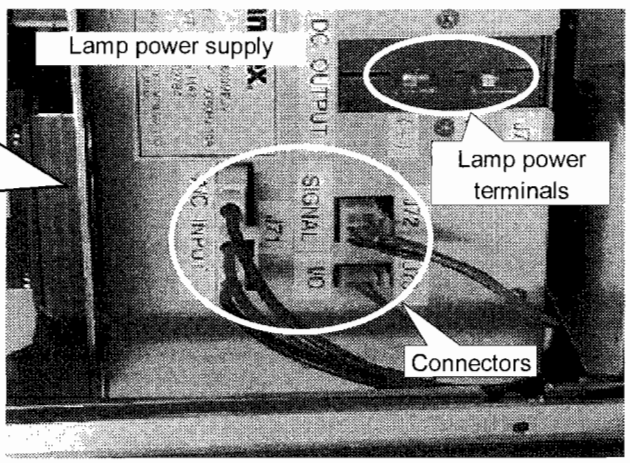
1. Shift the protector bracket to the side.
2. Take out 2 screws [P]. Pull out the lamp power supply to where the upper connectors are visible.
3. Disengage the connectors of the lamp power supply terminals (see figure).

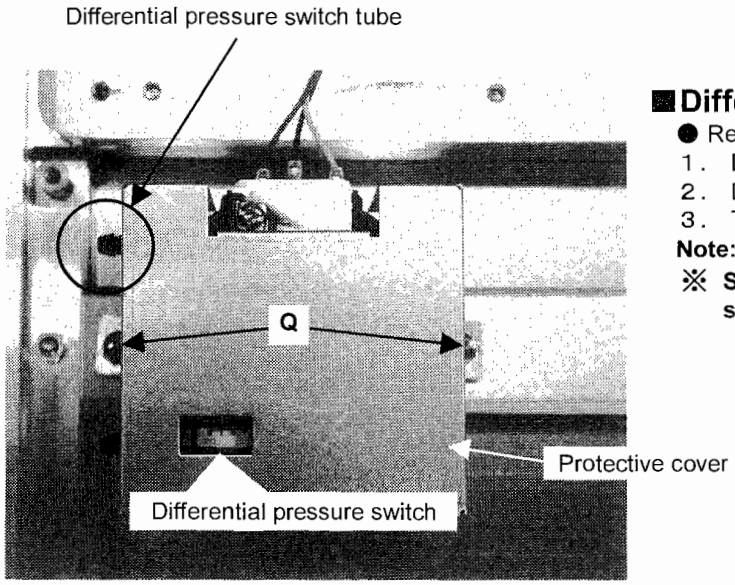
Note:

※ Use care regarding polarity when reconnecting.

4. Remove the lamp power supply.







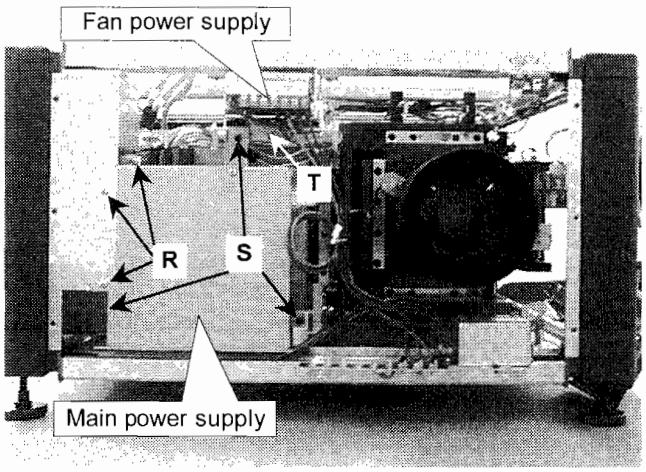
■Differential pressure switch

● Remove the left panel (see page 1-8).

1. Disengage the differential pressure switch tube.
2. Disengage the differential pressure switch connector.
3. Take out 2 screws [Q].

Note:

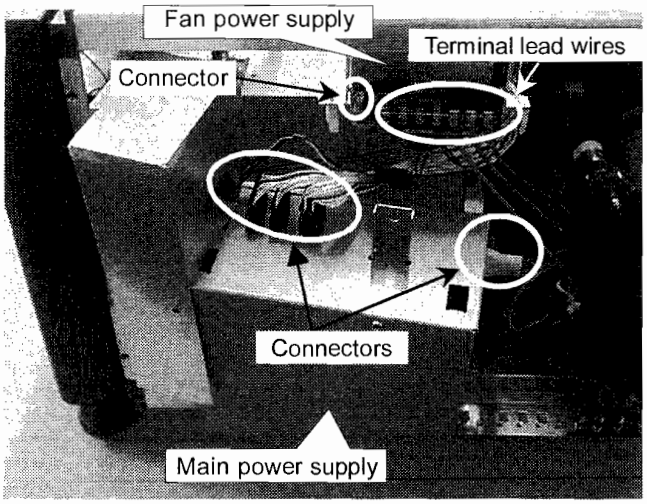
※ Set the Differential pressure switch to 25 of the scale.



■Main power supply

●Remove the front panel (see page 1-8).

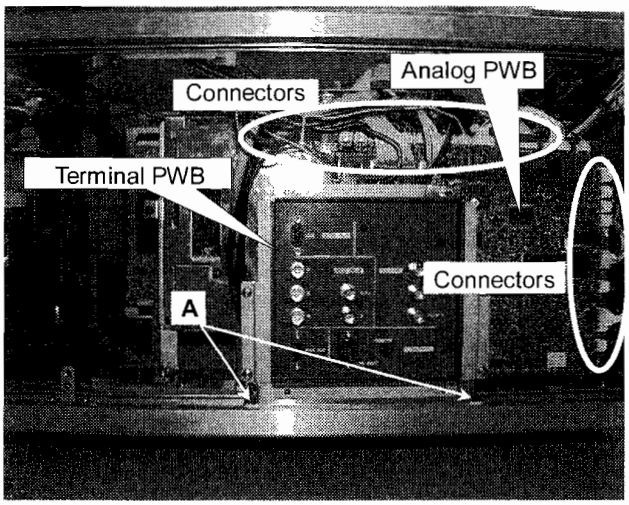
1. Take out 2 screws [R] of the duct cover.
2. Take out 3 screws [S] of the Main power supply.
3. Partially extract the Main power supply.
4. Disengage the connectors (see figure) and Main power supply.



■Fan power supply

●Remove the front panel (see page 1-8).

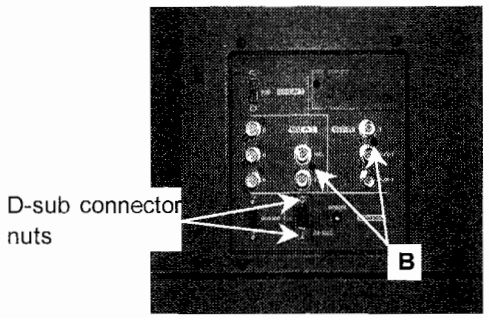
1. Remove the protective cover from the terminals.
2. Disengage 5 lead wires from the terminals.
3. Disengage the connector of the power supply PWB.
4. Take out 1 screw [T] (see figure).
5. Extract and remove the fan power supply.



■Analog PWB

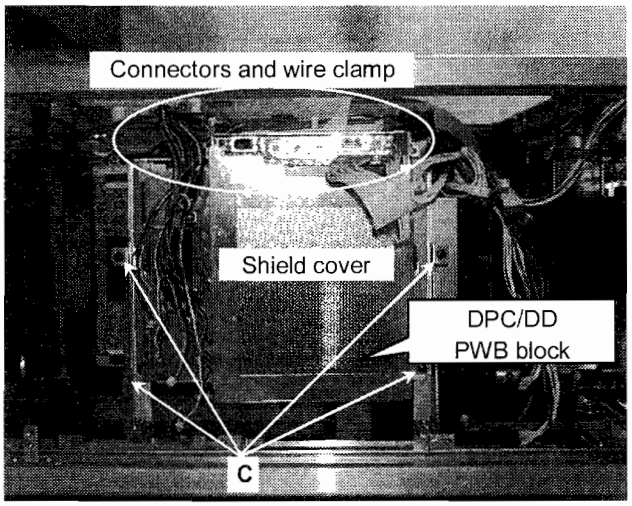
● Remove the Right panel and right panel fan (see page 1-8 and 1-9).

1. Take out 2 screws [A]
2. Disengage the analog PWB connectors.
3. Disengage the BNC and D-sub connectors between the analog and DPC P. W. boards (see figure).



■Terminal board

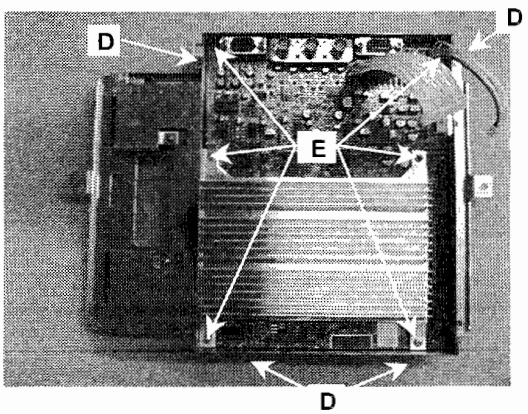
1. Take out 2 screws [B].
2. Take off 2 D-sub connector nuts.



■DPC/DD PWB block

● Remove the Right panel, right panel fan and analog PWB (see page 1-8, 1-9 and 1-13).

1. Take out 4 screws [C].
2. Disengage the connectors between the DPC and DD P. W. boards.
3. Disengage the wires from the wire clamp and remove the DPC/DD PWB block.



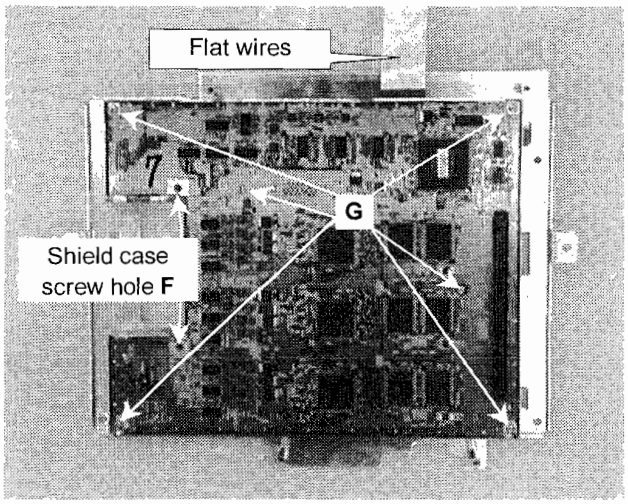
■DPC PWB disassembly

1. Remove the shield cover.
2. Take out 4 screws [D] from the DPC/DD PWB block and separate the DPX shield bracket.

Note:

※Use care regarding board connector CN002.

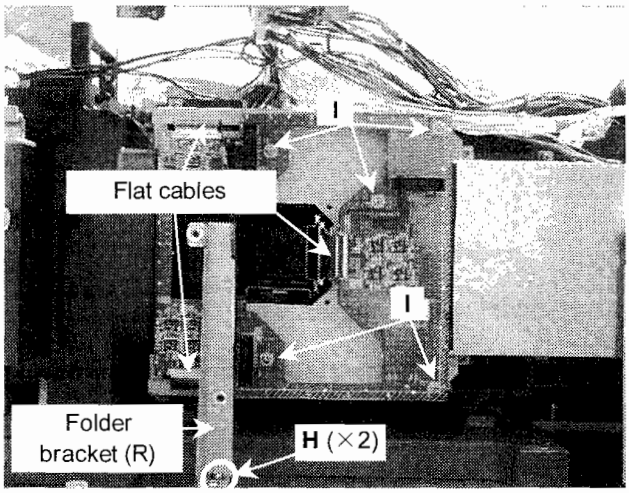
3. Take out 6 screws [E] from the DPC shield bracket and separate the DPC PWB.



■DD PWB disassembly

● Separate the DPC PWB

1. Take out 2 screws [F] and remove the shield cover.
2. Take out 6 screws [G]. Remove the DD PWB and shield bracket.
3. Disengage the bracket wires and remove the DD PWB.



■DD-SUB PWB

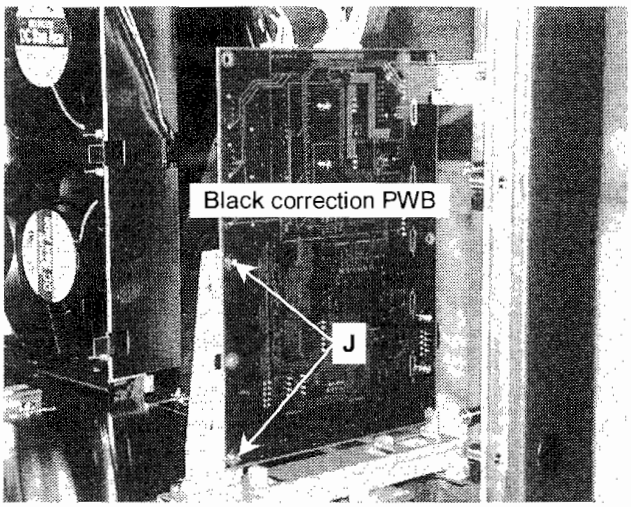
● Remove the Right panel, right panel fan, analog PWB and DPC/DD PWB block (see page 1-8, 1-9 and 1-13).

1. Take out 2 screws [H] and remove the folder bracket (R).
2. Disengage 3 flat cables.

Note:

※ The flat cables are directly connected to D-ILA panel. The D-ILA panel is easily damaged by static electricity. Be sure to use anti-static protection (e.g., wristband) when working with the flat cables, DD-SUB PWB and surrounding area.

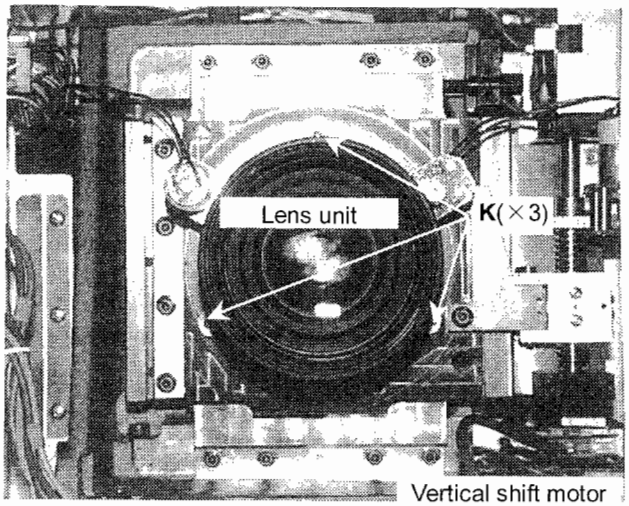
3. Take out 5 screws [I] and remove the DD-SUB PWB.



■Black correction PWB

● Remove the Right panel, right panel fan and analog PWB (see page 1-8, 1-9 and 1-13).

1. Take out 2 screws [J].
2. Disengage the connectors and remove the black correction PWB.



■Lens unit

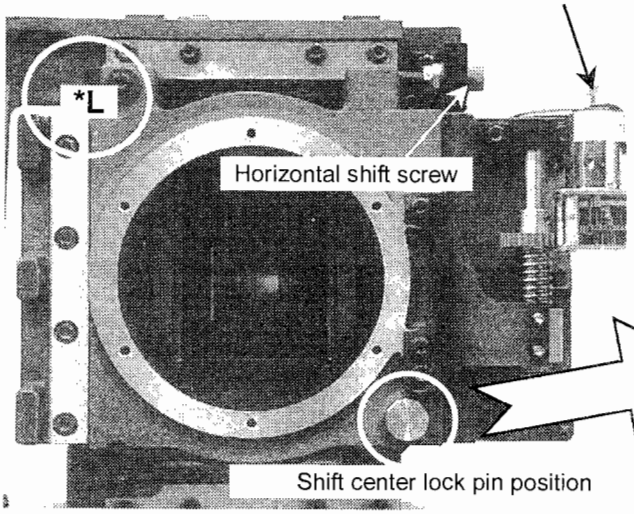
● Remove the front panel (see page 1-8).

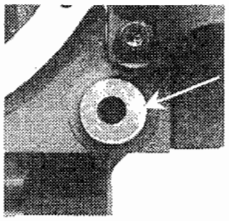
1. Take out 2 screws and remove the lens guard (refer to lens instructions).
2. Take out 3 screws [K].
3. Remove the lens unit in the forward direction.

■Shift center lock pin

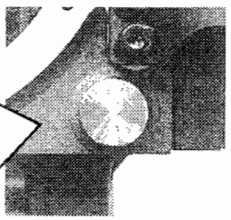
Note:

※ The shift center lock pin is removed at time of transport, when the lens shift function is not used, and when the OP unit is removed from the projector. Use care to install it correctly.

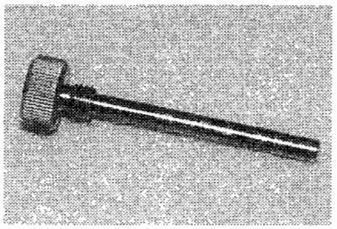




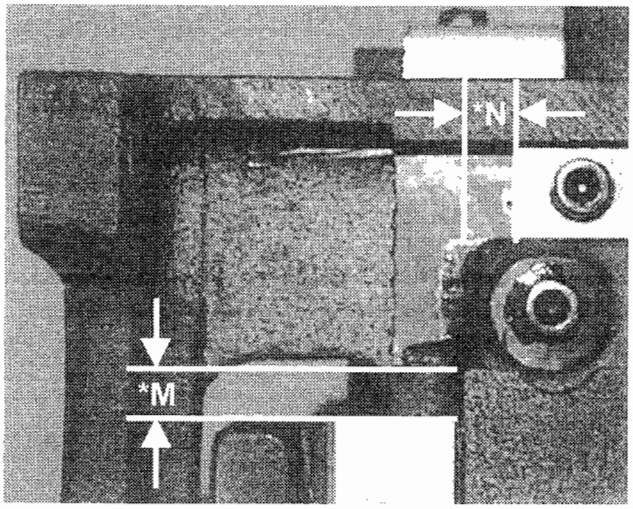
Removal state



Installed state



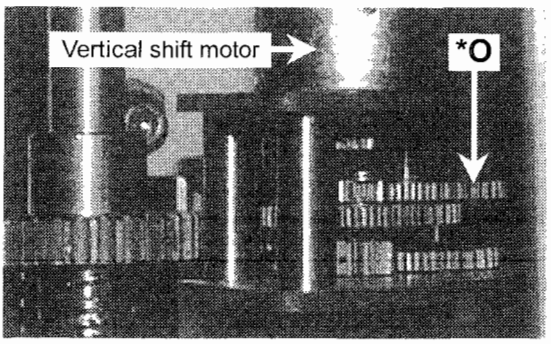
Shift center lock pin

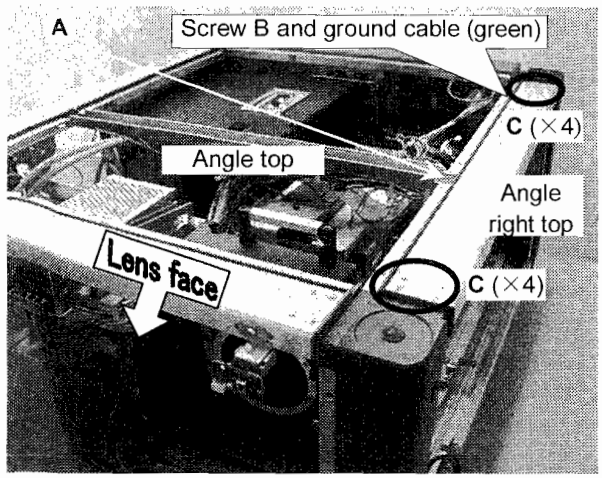


● Remove the front panel and lens unit (see page 1-8 and 1-15).

1. Turn vertical shift motor gear (*O in figure) by hand to where the OP unit front (*L) vertical shift margin (*M) is visually absent.
   Insert the shift center lock pin into the mounting hole.
   While gently pressing the pin inward, adjust the gear to where to where the pin can be inserted more deeply.

2. Adjust the horizontal shift screw to where the horizontal shift margin (*N in figure) is visually absent.
   While gently pressing the pin inward, adjust the screw to where the pin can be inserted more deeply.
   Turn the pin to where it is secured fully inward.

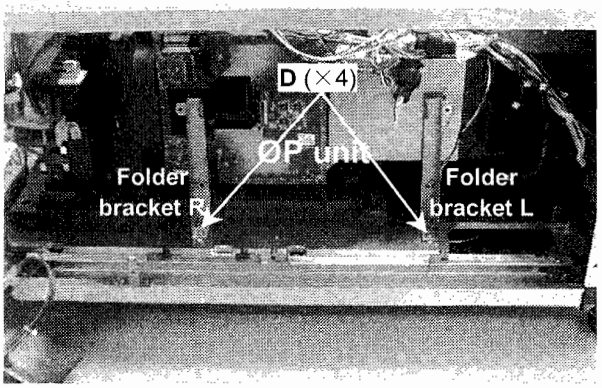




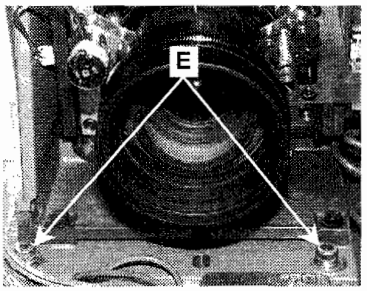
■OP unit

- Remove the front panel (see page 1-8).
- Remove the lens unit (see page 1-15).
- Remove the top, right and back panels (see page 1-8 and 1-9).
- Remove the lamp unit (recommended, although work is possible without removing the lamp unit, work is easier with the unit removed) (see page 1-11).
- Remove the analog, DPC, DD and DD-SUB P. W. boards (see page 1-13 and 1-14).

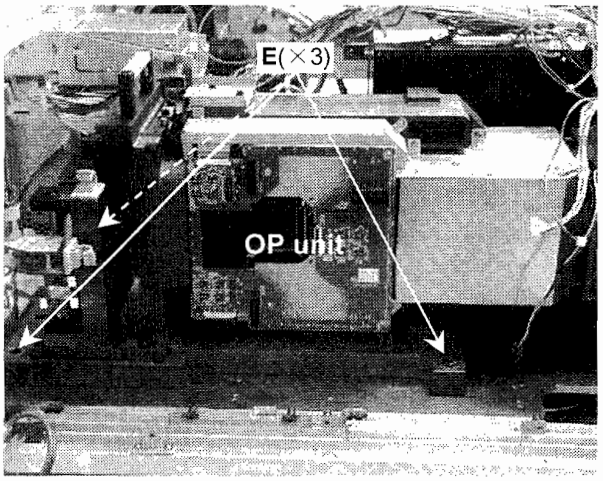
1. Take out 2 screws [A].
2. Remove the angle top.
3. Take out screw [B] and remove the ground cable.
4. Take out 8 screws [C] and remove the angle right top.



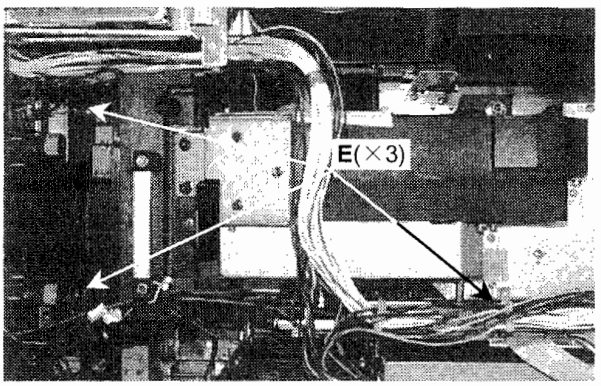
5. Take out 4 screws [D].
6. Remove the R and L folder brackets.
7. Take out 3 screws [E].
8. Remove the OP unit.

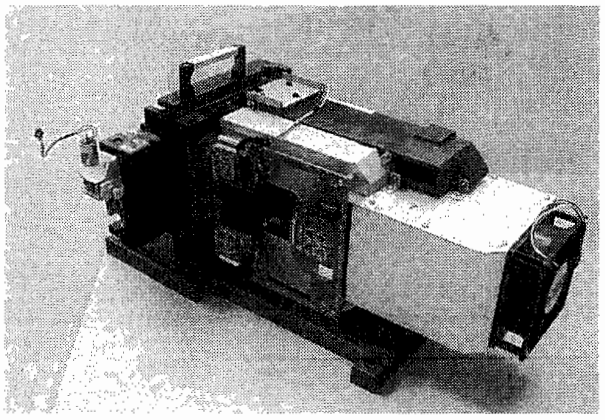


OP unit from lens side



OP unit from above





OP unit removed

SERVICE ADJUSTMENTS

Electrical adjustment

Before starting adjustment

1. **Data back up is required before adjustments.**
2. Adjustment items utilize a personal computer.
   Refer to the instruction manual of the adjustment software regarding software handling and set up.
3. This instruction is for **PSA3** Control Program. Use the latest version program.
4. Allow the equipment and test instruments adequate time (at least 30 minutes) to warm-up.
5. Confirm the set is properly connected to the specified AC power source.
6. Use care not to disturb internal controls and parts not specifically mentioned.
7. Unless specifically mentioned in the adjustment steps, do not change any data.
8. Refer to the standard schematic diagram for test point locations.

Instruments and tools

For all model

- DC voltmeter (digital voltmeter)
- Oscilloscope
- NTSC signal generator (composite and S-VIDEO output): Grey scale (0IRE – 100IRE)
- DTV (1080i) signal generator (Y, PB, PR outputs): Grey scale (0IRE – 100IRE)
- VGA signal generator: Following flat patterns: 60% white, 0% black
  Following flat patterns for each RGB colors and white:
  100%, 93%, 87%, 80%, 70%, 63%, 57%, 50%, 43%, 37%, 30%, 20%, 13%, 7%, 0%
  Grey scale / G scale : 15steps or more (above 15 signal levels must be included)
- Screen
- Darkroom (illumination less than 0.03 lx)
- Light meter [for example: Minolta T-1]
- Personal computer

Operating system	Windows 95
Memory	More than 16 Mbytes
Hard disk free space	More than 5 Mbytes
RS-232C interface	At least 1 port
Display resolution	Minimum : 800 × 600 pixels Recommended : 1024 × 768 pixels or better
Display colors	Minimum : 8 bits/pixel Recommended : 16 bits/pixel or better
Input devices	Keyboard and mouse

- D-ILA **PSA3** control software
- RS-232C 9pin NULL-MODEM (cross) cable
- Color filters: G color filter (ex. MELLES GRIOT 03 FIV 044)
  R color filter (ex. MELLES GRIOT 03 FIB 014)
  B color filter (ex. MELLES GRIOT 03 FIV 028)

Required adjustments by replacing signal PWB ASS'Ys, Optical block or MAIN POWER UNIT (LVPS).

Replacement of the ANALOG PWB ASS'Y, DPC PWB ASS'Y, DD PWB ASS'Y, DD-SUB PWB ASS'Y, Optical block or MAIN POWER UNIT (LVPS) required below adjustment.

The indication of (confirm) means after the replacement, confirm this item and adjust if necessary.

■ ANALOG PWB ASS'Y

● **Data back up before replacing the PWB ASS'Y.** (Use Download of the **PSA3** software)

※ It is necessary to do all adjustment in case of the data back up was not done.

● **Replacing the PWB ASS'Y.**

1. Data input

● **Data restore after replacing the PWB ASS'Y.** (Use Upload of the **PSA3** software)

2. Common DC adjustment
3. NTSC timing and pedestal adjustment
4. NTSC RGB contrast adjustment
5. HDTV RGB contrast adjustment
10. Shading adjustment (confirm)
11. 8 bars adjustment (confirm)

■ DPC PWB ASS'Y

● **Data back up before replacing the PWB ASS'Y.** (Use Download of the **PSA3** software)

6. A-D converter aperture adjustment (confirm if all data are same as Standard data)
7. Sub-brightness and sub-contrast adjustment
8. Gamma adjustment (confirm)
10. Shading adjustment (confirm)
11. 8 bars adjustment (confirm)

■ DD PWB ASS'Y, DD-SUB PWB ASS'Y and OPTICAL BLOCK

● **Data back up before replacing the PWB ASS'Y.** (Use Download of the **PSA3** software)

2. Common DC adjustment
8. Gamma adjustment
9. D-ILA clock phase adjustment
10. Shading adjustment
11. 8 bars adjustment

■ MAIN POWER UNIT (LVPS)

● **Data back up before replacing the PWB ASS'Y.** (Use Download of the **PSA3** software)

2. Common DC adjustment
8. Gamma adjustment: 0 % and 100% luminance adjustment

Adjustment procedure

1. Data input

Required if the ANALOG PWB ASS'Y is replaced.

Note : Data "Download" is required before replacement of the ANALOG PWB ASS'Y.

Instrument : NTSC signal generator

(1) Set the projector to the standby mode (signal not needed).

(2) Start the PSA2 software and open Service Menu [Area Data] , click [DOM. US] for NTSC model or [E. EK] for PAL model, then click [Transmit all] .
(By performing this, area data are transmitted for all circle-marked items of the table.)

(3) Set the projector to the operate mode (switch on).

(4) Click [Power] and confirm the display turned [Off] to [On] .

Note : **· Do the data "Upload" if there is downloaded data, then do not proceed (5) and (6).**
· During data "Upload", the signal (AREA) and the input (LINE) must be same as download condition.

(5) Supply an analog grey scale signal to Y/C input (NTSC) and project it.

(6) Select the bellow file by [File(F)] [Open(O)] , then click [Open(O)] .
File to be selected : A00_L00.acd
Then, click [Cancel] for "ILA Data is changed, save data to the file?".
Click [OK] for "Load continue?".
Click [OK] for "Transmit the loaded data to projector?".

2. Common DC adjustment

Required when replacing the ANALOG PWB ASS'Y, DD PWB ASS'Y, optical block, or MAIN POWER UNIT (LVPS).

Instrument: VGA signal generator
Oscilloscope
Light meter (Minolta T-1)

(1) Supply R only of VGA 50% white signal and project on the screen.
(2) Connect the Light meter A-Out terminal output to the oscilloscope and place in front of the lens where the most easy point to observe the flicker.
Note : Do not adjust under the lamp that flickers.
(3) Observe the light volume and after asking Service Menu [EVR] [ILA] [COM Voltage R] , adjust to minimize the waveform amplitude with the oscilloscope coupling both of DC and AC.
(4) Similarly, supply G only and B only of signals, and respectively adjust [COM Voltage G] [COM Voltage B] .
Note : Large deviation of this adjustment can cause image flicker. Element burn can occur when out of adjustment.

3. NTSC timing and pedestal adjustment

Required when replacing the ANALOG PWB ASS'Y.

Instrument : NTSC signal generator
Oscilloscope

(1) Supply an analog grey scale signal and project it.
(2) Open main menu [Set Up] , select Y/C of [LINE] .
(3) Connect the oscilloscope to ANALOG PWB ASS'Y TP-102 (ground at TP-E1).
(4) Display Service Menu [EVR] [DECOD] , click [Pedestal level] . [HPOS Timing T] and [HPOS Timing W] , then set to 255.
(5) Observe the waveform with the oscilloscope and adjust [HPOS Timing W] to set the blanking W (Fig. 1) to 11 μ s.
(6) Adjust [HPOS Timing T] to align the rear edge of the video signal (grey scale) with the front edge of the adjusted blanking W (Fig. 2). In case of it does not synchronize, set 255.
(7) Adjust [Pedestal level] to the blanking to the same level as 0 IRE (Fig. 3).

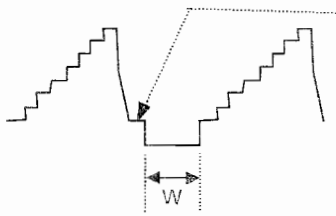


Fig. 1

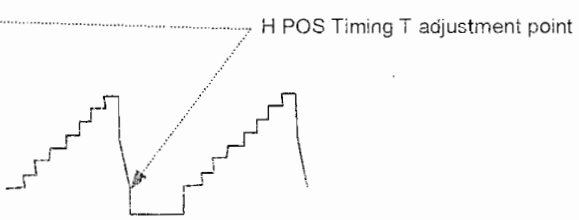


Fig. 2

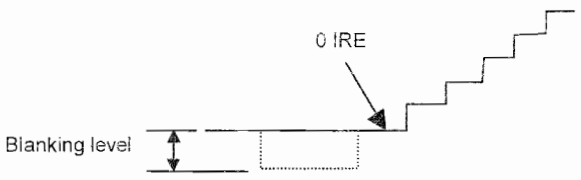


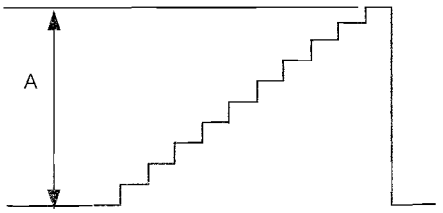
Fig. 3

4. NTSC RGB contrast adjustment

Required after replacing the ANALOG PWB ASS'Y.
Instrument : NTSC signal generator
Oscilloscope

(1) Supply an analog grey scale signal and project it.
(2) Connect the ANALOG PWB ASS'Y test point TP-305 with the oscilloscope. Open Service Menu [EVR] [NTSC], click [G Gain] and set the voltage from 0 to 100 IRE to 0.7Vp-p (A of the figure).
Note : Adjust the green gain before the adjusting red and blue.
(3) Connect the ANALOG PWB ASS'Y test points indicated below with the oscilloscope. Click the following gain items of the Service Menu [EVR] [NTSC] and set the voltages from 0 to 100 IRE (A of the figure).

Adjustment item	Test point	Setting voltage
G Gain	TP-305	0.7(±0.02)V(p-p)
R Gain	TP-304	0.7(±0.02)V(p-p)
B Gain	TP-306	0.7(±0.02)V(p-p)

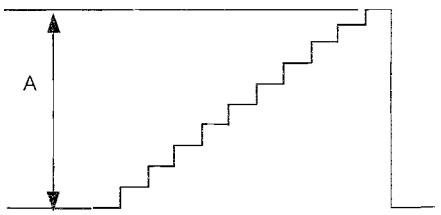


5. HDTV RGB contrast adjustment

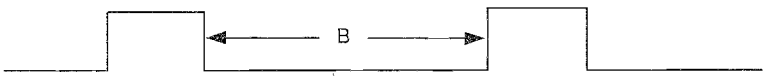
Required after replacing the ANALOG PWB ASS'Y.
Instrument: DTV (1080i) signal generator
Oscilloscope

(1) Supply a DTV grey scale signal to the Y PB PR terminal and project it.
(2) Connect the ANALOG PWB ASS'Y TP-305 with the oscilloscope. Open Service Menu [EVR] [HDTV], click [G Gain] and set the voltage from 0 to 100 IRE to 0.7Vp-p (A of the figure).
Note: Adjust the green gain before the adjusting red and blue.
(3) Connect the ANALOG PWB ASS'Y test points indicated below with the oscilloscope. Click the following gain items of the Service Menu [EVR] [NTSC] and set the voltages from 0 to 100 IRE (A of the figure).

Adjustment item	Test point	Setting voltage
G Gain	TP-305	0.7(±0.02)V(p-p)
R Gain	TP-304	0.7(±0.02)V(p-p)
B Gain	TP-306	0.7(±0.02)V(p-p)



(4) Connect the ANALOG PWB ASS'Y TP-509 (ground at TP-E5) with the oscilloscope.
(5) Open Service Menu [EVR] [HDTV], then adjust [Half H Killer T] to the pulse period B in figure becomes 19.6±0.1 μs.



6. A-D converter aperture adjustment

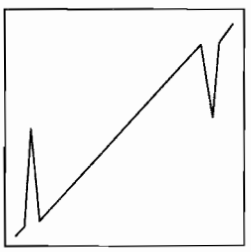
Required after replacing the DPC PWB ASS'Y.
** This item must be done for DPC PWB ASS'Y without the shield case.*
Instrument : VGA signal generator
Oscilloscope or DC voltmeter (digital voltmeter)

Note : Fit the DPC PWB ASS'Y without shield case to the projector.
(1) Supply VGA grey scale signal and project on the screen.
(2) Connect the following DPC PWB ASS'Y test points with the oscilloscope or DC voltmeter (digital voltmeter).
(3) Open Service Menu [EVR] [ADCV] . After asking the following items, adjust the following voltages (DC). (Ground is TP-001.)

Adjustment item	Test point	Setting voltage	Standard data
ADCV(H)R	TP-302	3.6(±0.1)V	178
ADCV(H)G	TP-304	3.6(±0.1)V	178
ADCV(H)B	TP-306	3.6(±0.1)V	178
ADCV(L)R	TP-301	1.6(±0.1)V	78
ADCV(L)G	TP-303	1.6(±0.1)V	78
ADCV(L)B	TP-305	1.6(±0.1)V	78

7. Sub-brightness and sub-contrast adjustment

Required after replacing the DPC PWB ASS'Y.
Instrument : VGA signal generator



(1) Supply VGA grey scale signal and project on the screen.
(2) Open Service Menu [Gamma] , [Receive] [G] gamma data.
(3) Make a note of the Control Point 1 and 15 (0% and 100%) coordinates data.
(4) Raise the Y Position of the Control Point No. 1 to 600 or more and lower the Y Position of the Control Point No. 15 data to 400 or less as shown in the figure.
(5) Change Interpolation to Line, then [Transmit] data.
(6) Open Service Menu [DDIC] , and set [GIN] , [STC] , [DYN] and [LUM] to [Off] (only [GAM] is [On]).
(7) Open Service Menu [EVR] [BRIGHT] .
(8) Adjust [BRIGHT G] so that the 0 % screen component brightness rise is sharp and maximum brightness.
(9) Open Service Menu [EVR] [CONT] .
(10) Adjust [CONT G] so that the 100 % screen component brightness fall is sharp and darkest.

Note: In case of difficult to find the darkest / brightest point, follow below procedure.
- Open Service Menu [DDIC] , and set [GIN] to [On] .
- Open [DDIC] [Gain] , click [Receive all] , then make a note of the color #1 data.
- In same condition, click [All 8 Bars] , click the color CH #1, then set [GIN] to 125.
- Adjust (7) to (10).
- Open [DDIC] [Gain] , click [All 8 Bars] , click the color CH #1, then return [GIN] data to noted above.

(11) Return the [Gamma] [G] Y Position of Control Point No. 1 and Control Point No. 15 data to noted above, change Interpolation to Spline and [Transmit] .
(12) In the same manner as G, adjust the R and B sub brightness and sub contrast.
(13) Open Service Menu [DDIC] , and return [GIN] , [STC] , [DYN] and [LUM] to [On] .

8. Gamma adjustment

Note : Cannot be adjusted without a darkroom and lightmeter. If not available, do "8-2 Gamma adjustment (field service)".

8-1 Gamma adjustment (factory service)

Required after replacing the DPC PWB ASS'Y, DD PWB ASS'Y, DD-SUB PWB ASS'Y, optical block, or MAIN POWER UNIT (LVPS).

Instrument : VGA signal generator
Light meter (Minolta T-1)
R / G / B color filters

(1) Preparation

1) Supply some signal and project on the screen.
2) Open Main menu [Picture] and set [Color Temp] to [Middle] .
3) Open Service Menu [DDIC] , click [Default] then click [Transmit all] .
4) Open Service Menu [DDIC] , set [STC] , [DYN] and [LUM] to [Off] .
5) Open Service Menu [Gamma] then change interpolation to line.

(2) G MAX luminance measurement

1) Supply G only of VGA 100 % signal and project on the screen.
2) Open Service Menu [EVR] [ILA] , click and make a note of the [OFFSET Voltage R] , [OFFSET Voltage G] and [OFFSET Voltage B] .
3) Open Service Menu [EVR] [ILA] , then set [OFFSET Voltage R] and [OFFSET Voltage B] to 255.
4) Open Service Menu [DDIC] ,and set [DYN] to [Off] , then click [GIN] and [GAM] to confirm both of them are [On] .
5) Put the G color filter in front of the light meter and measure the screen center luminance.
(Set the distance from the projection lens to the lightmeter to approximate 30cm, then don't move those.)
6) Open Service Menu [EVR] [ILA] and adjust [OFFSET Voltage G] to maximum luminance and make a note as **Max. luminance**.

(3) G adjustment target computation

1) From the measured G maximum luminance, compute the 100 to 0 % target adjustment values from the **luminance table**.

luminance table

Input (%)	Control Point	X Position	Signal ratio (%)	YL output (Ix ratio) $(\text{Signal ratio})^{2.2}$	Target computation formula	Computed value
	16	1023				
100	15	960	100	100.00	**Max. luminance** × 0.95	
93	14	897	93	85.24	100 % luminance computed value × YL output	
87	13	844	87	73.61	↑	
80	12	781	80	61.21	↑	
70	11	691	70	45.63	↑	
63	10	628	63	36.19	↑	
57	9	574	57	29.04	↑	
50	8	512	50	21.76	↑	
43	7	449	43	15.62	↑	
37	6	396	37	11.22	↑	
30	5	333	30	7.07	↑	
20	4	243	20	2.90	↑	
13	3	180	13	1.12	↑	
7	2	127	8	0.39	↑	
0	1	64	6.6	0.25	↑	
	0	0				

(4) G luminance adjustment

- 0 % luminance
  1) Supply G only of VGA 0 % black signal and project on the screen.
  2) Open Service Menu [EVR] [ILA], click [OFFSET Voltage G], then adjust to the computed value±5%.
- 100 % luminance
  1) Supply G only of VGA 100 % white signal and project on the screen.
  2) Open Service Menu [DDIC] [Gain], click [All 8 Bars], click one number of Green Gain #1 - #8 then adjust [GIN] to the computed value±5%.
- 50 % luminance
  1) Supply G only of VGA 50 % white signal and project on the screen.
  2) Open Service Menu [Gamma], click [G] and [Receive] gamma data.
  3) Adjust the Y value at the gamma curve X-axis Control Point No. 7, 8 and 9 (48 %, 50 % and 57 %) in the same manner to the above computed target value±10%.

  Note : Transmit the data at each Y value adjustment of the screen.
- 93 % - 7 % luminance
  1) In the same manner as 50 %, adjust Control Point No. 11, 12 and 13 for 80 %, and Control Point No. 4, 5 and 6 for 30 %.
  2) Sequentially adjust for other Control Points (No. 2, 3, 10 and 14) for smooth conformance with the gamma curve.
  3) Change Interpolation to Spline.
  4) Adjust the 93% (Control Point No. 13 and 14) in the same manner to the above computed target value ±5% and smooth conformance with the gamma curve
  5) Adjust 80% (Control Point No. 11, 12 and 13), 57% (Control Point No. 8, 9 and 10), 43% (Control Point No. 6, 7 and 8), 30% (Control Point No. 4, 5 and 6) and 13% (Control Point No. 2, 3 and 4), in the same manner to the above computed target values and smooth conformance with the gamma curve
- 0 % and 100 % readjust
  1) Readjust the 0 % (Control Point No. 1) and 100 % (Control Point No. 15) luminance to the computed value ±5%.
- final confirmation
  1) Sequentially adjust for other Control Points (No. 2, 4, 6, 8, 10, 11 and 13) for smooth conformance with the gamma curve.
  2) Supply VGA grey scale signal and confirm normal gradation on the screen.

(5) Data re-input

1) Open Service Menu [EVR] [ILA], then return [OFFSET Voltage R] and [OFFSET Voltage B] to the values noted above.

(6) R and B gamma

1) In the same manner as G, measure max. luminance, compute the target values, adjust the luminance and do the data re-input.
2) Supply VGA grey scale signal, and confirm normal gradation and white balance for each signal level.

(7) At the end of adjustment

1) Open Service Menu [DDIC] and return [STC], [DYN] and [LUM] to [On].

8-2 Gamma adjustment (field service)

Required after replacing the DPC PWB ASS'Y, DD PWB ASS'Y, DD-SUB PWB ASS'Y or optical block.
Instrument : VGA signal generator

(1) Supply G only of VGA grey scale signal and project on the screen.
(2) Open main menu [Picture] and set [Color Temp] to [Middle] .
(3) Open Service Menu [EVR] [ILA] , click and make a note of the [OFFSET Voltage R] , [OFFSET Voltage G] and [OFFSET Voltage B] .
(4) Open Service Menu [EVR] [ILA] , then set [OFFSET Voltage R] and [OFFSET Voltage B] to 255.
(5) Open Service Menu [DDIC] , and set [LUM] to [Off] .
(6) Open Service Menu [Gamma] then select [G] and adjust each Control Point No. 2 to Control Point No.14 for natural gradation at each signal level.
Note : Transmit the data for each Y Position adjustment of the screen.
(7) Open Service Menu [EVR] [ILA] , then return [OFFSET Voltage R] and [OFFSET Voltage B] to the values noted above.
(8) Supply VGA grey scale signal.
(9) Adjust R gamma and B gamma similarly as G gamma for natural white balance at each signal level.
Note : Transmit the data for each Y Position adjustment of the screen.
(10) Open Service Menu [DDIC] and return [LUM] to [On] .

9. D-ILA clock phase adjustment

Required after replacing the DD PWB ASS'Y, DD-SUB PWB ASS'Y or optical block.
Instrument : VGA signal generator

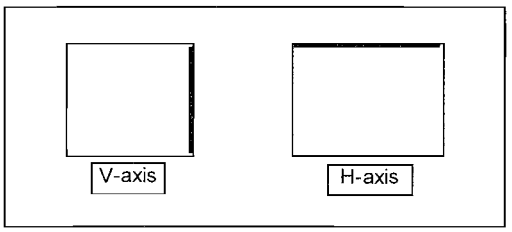
(1) Supply VGA 50 % white signal and project on the screen.
(2) Display the on-screen character.
(3) Open Service Menu [DDIC] [Pixel] and adjust [DDCDLY] to minimize the ghost.
Note : Cancel the left side ghost and minimize the right side ghost.
(4) Put off the on-screen character.

10. Shading adjustment

Required after replacing the ANALOG PWB ASS'Y, DPC PWB ASS'Y, DD PWB ASS'Y, DD-SUB PWB ASS'Y or optical block.
Instrument : VGA signal generator
Lightmeter (Minolta T-1)

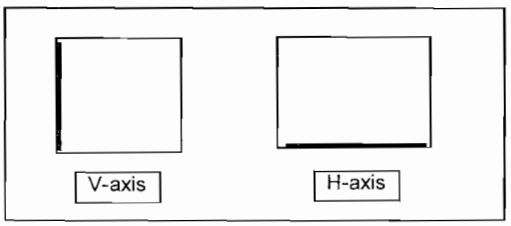
(1) Preparation
1) Supply VGA signal and project on the screen.
2) Open Service Menu [Shading] , click [LUM] , click [R] click [Default] click [Transmit] , click [G] click [Default] click [Transmit] , click [B] click [Default] click [Transmit] . (Confirm the chart and figure became as Chart 1 and Fig. 1.)
3) Open Service Menu [Shading] , click [DYN] , click [R] click [Default] click [Transmit] , click [G] click [Default] click [Transmit] , click [B] click [Default] click [Transmit] . (Confirm the chart and figure became as Chart 1 and Fig. 1.)

Fig. 1



4) Open Service Menu [Shading] , click [STC] , click [R] click [Default] click [Transmit] , click [G] click [Default] click [Transmit] , click [B] click [Default] click [Transmit] . (Confirm the chart and figure became as Chart 2 and Fig. 2.)

Fig. 2



5) Open Service Menu [DDIC] then set [GIN] , [GAM] and [DYN] to [On] ,and set [STC] and [LUM] to [Off] .

(2) Black shading (G) adjustment

1) Supply VGA 7 % white signal and project on the screen.
2) Open Service Menu [Shading] , click [DYN] and click [G] .
3) Vary the Y: data and interpolation of H-axis and adjust to minimize the horizontal shading on the screen.
   Note: More than one of the Y: value must be 0.
   Transmit the data at each adjustment.
4) Vary the Y: data and interpolation of V-axis and adjust to minimize the vertical shading on the screen.
   Note: More than one of the Y: value must be 0.
   Transmit the data at each adjustment

(3) White shading (G) adjustment

1) Supply VGA 60 % white signal and project on the screen.
2) Open Service Menu [Shading] , click [DYN] and click [G] .
3) Vary the Y: data and interpolation of H-axis and adjust to minimize the horizontal shading on the screen.
   Note: More than one of the Y: value must be 255.
   Transmit the data at each adjustment.
4) Vary the Y: data and interpolation of V-axis and adjust to minimize the vertical shading on the screen.
   Note: More than one of the Y: value must be 255.
   Transmit the data at each adjustment

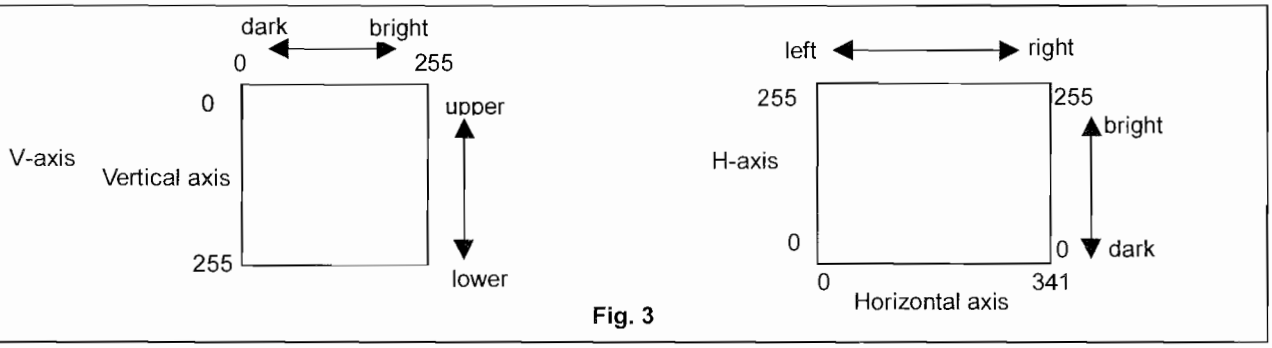


Fig. 3

(4) R and B adjustment

1) In the same manner as G, adjust Service Menu [Shading] , [R] and [G] .

(5) Screen center luminance adjustment

Note : This adjustment must be performed If H-axis / V-axis center values (H: 170, V: 127) ware adjusted.

1) Open Service Menu [DDIC] then set [STC] [DYN] to [Off] .
2) Open Service Menu [EVR] [ILA] , click and make a note of the [OFFSET Voltage R] , [OFFSET Voltage G] and [OFFSET Voltage B] .
3) Open Service Menu [EVR] [ILA] , then set [OFFSET Voltage R] and [OFFSET Voltage B] to 255.
4) Put the G color filter in front of the light meter, supply G only of VGA 0% and 60 % white signal and project on the screen, then measure the screen center luminance for each signal level.
5) Open Service Menu [DDIC] then set [STC] [DYN] to [On] .
6) Open Service Menu [EVR] [ILA] , then adjust [OFFSET Voltage G] to almost same luminance measured above 4) at VGA 0%.
7) Open Service Menu [DDIC] [Gain] , click [All 8 Bars] and one of Green #1 - #8 number display area, adjust [GIN] to almost same luminance measured above 4) at VGA 60%.
8) Open Service Menu [EVR] [ILA] , then return [OFFSET Voltage R] and [OFFSET Voltage B] to the values noted above.
9) In the same manner as G, adjust R and B.

(6) At the end of adjustment

1) Open Service Menu [DDIC] and return [LUM] to [On] .

1 1 . 8 bars adjustment

Required after replacing the ANALOG PWB ASS'Y, DPC PWB ASS'Y, DD PWB ASS'Y, DD-SUB PWB ASS'Y or optical block.
Instrument : VGA signal generator

(1) Preparation

1) Adjust the focus to get the best focus on the screen.

(2) Black 8 bars adjustment

1) Supply G only of VGA 0 % black signal and project on the screen.
2) Open Service Menu [DDIC] then set [GIN] , [GAM] and [DYN] to [On] ,and set [LUM] to [Off] .
3) Open Service Menu [EVR] [ILA] , click and make a note of the [OFFSET Voltage R] , [OFFSET Voltage G] and [OFFSET Voltage B] .
4) Open Service Menu [EVR] [ILA] , then set [OFFSET Voltage R] and [OFFSET Voltage B] to 255.
5) Open Service Menu [EVR] [ILA] , and adjust [OFFSET Voltage G] for observation of the vertical lines.
6) Open Service Menu [Gamma] [G] , and adjust Green Gamma Offset1 - 8 to cancel the vertical lines.
Note : For observation of the vertical line's correspondence, change the Offset1 value higher.

(3) White 8 bars adjustment

1) Supply G only of VGA 80 % white signal and project on the screen.
2) Open Service Menu [EVR] [ILA] , and adjust [OFFSET Voltage G] for observation of the vertical lines.
3) Open Service Menu [DDIC] [Gain] , then click [Only 1 Bar] , and adjust #1 - #8 to cancel the vertical lines.
Note: For observation of the vertical line's correspondence, change the #1 value lower.

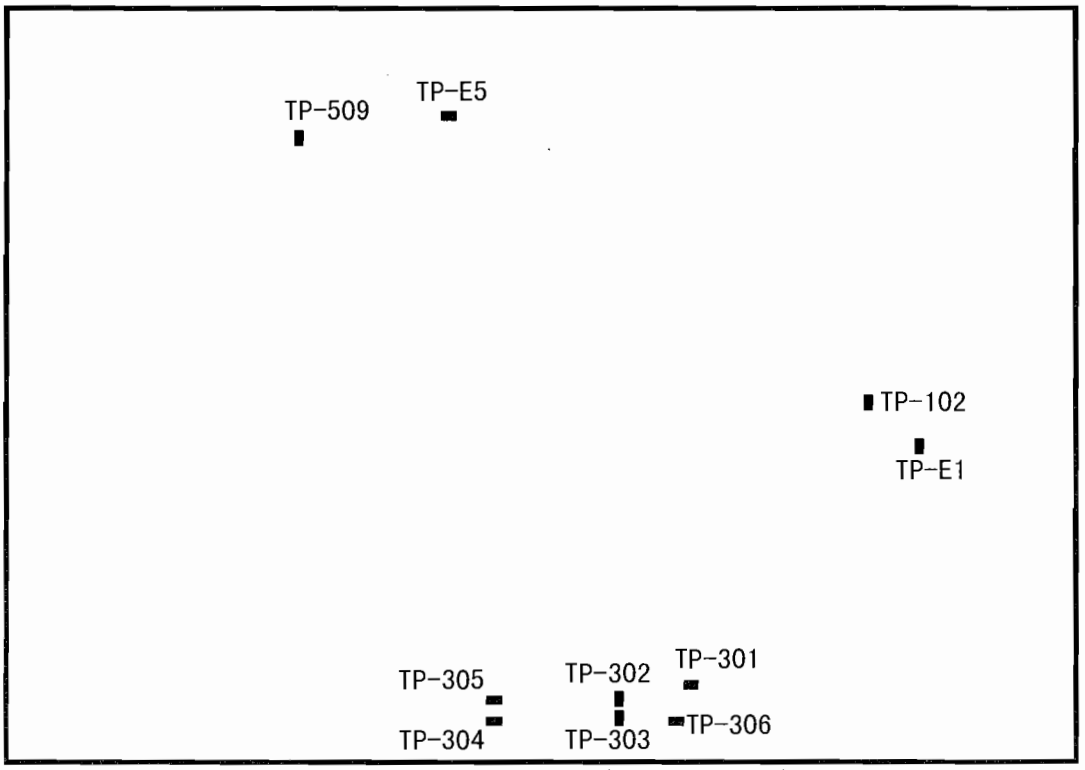
(4) R and B adjustment

1) In the same manner as G, adjust R and B.

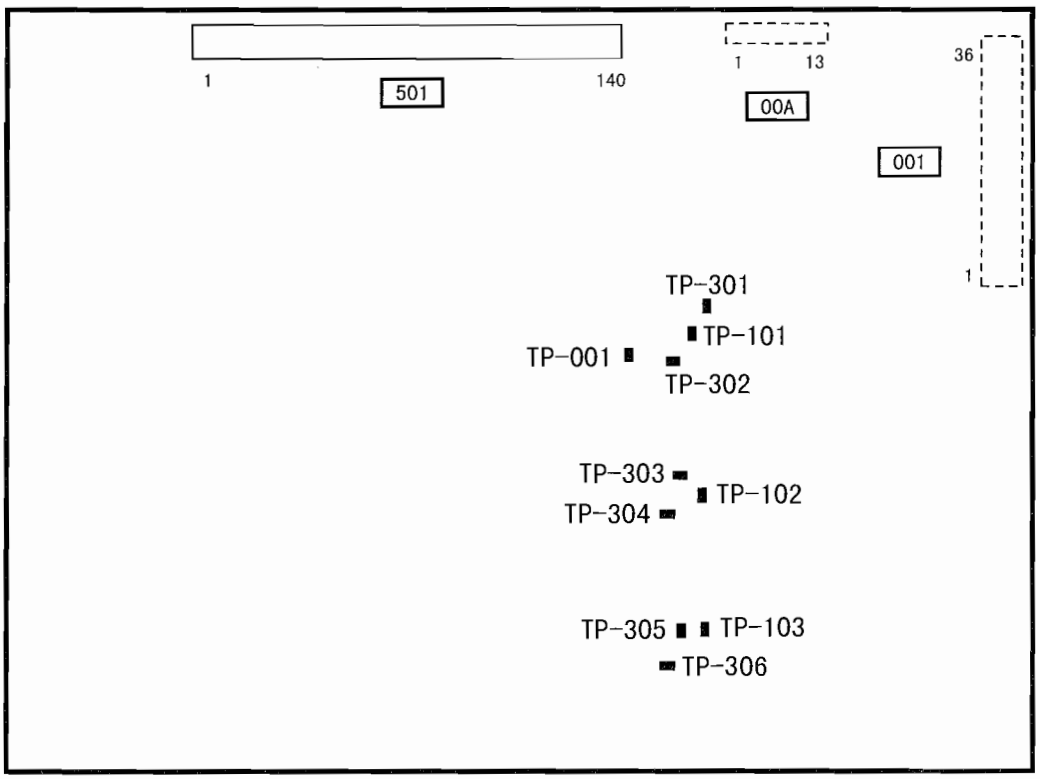
(5) Data input

1) Open Service Menu [EVR] [ILA] , then return [OFFSET Voltage R] , [OFFSET Voltage G] and [OFFSET Voltage B] to the values noted above.
2) Open Service Menu [DDIC] and return [LUM] to [On] .

TEST POINTS LOCATION



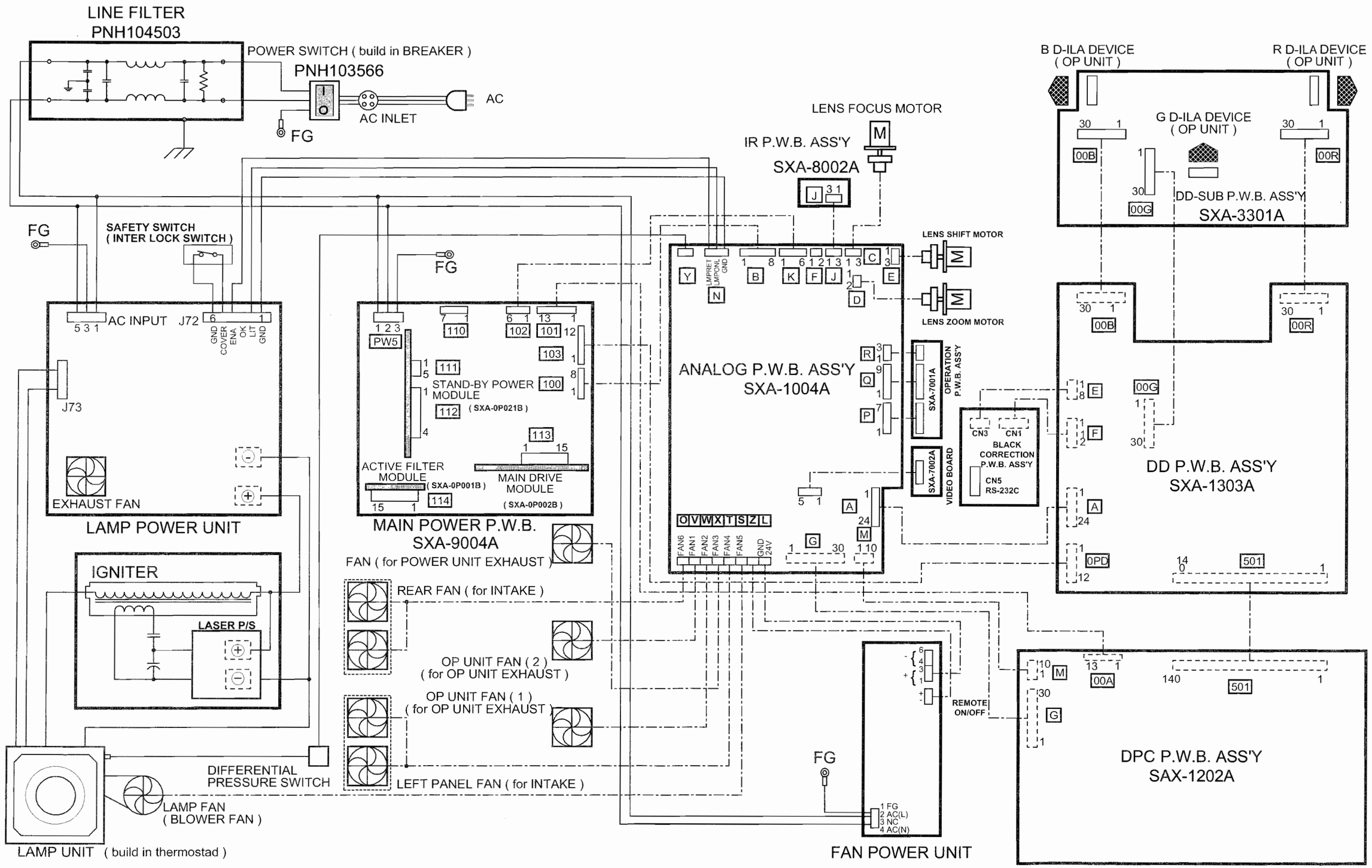
ANALOG PWB ASS'Y (PARTS SIDE)



DPC PWB ASS'Y (SOLDERING SIDE)

DLA-M4000LU
DLA-M4000LE

WIRING DIAGRAM



PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied .
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied .

MAIN PARTS LIST

		DLA-M4000LU PART No.	DLA-M4000LE PART No.	G4000 PART No.	PART NAME	DESCRIPTION
1	⚠	LC10586-002B	←	←	TOP PANEL	refer to page 1-8
2	⚠	LC10586-001B	←	←	BOTTOM PANEL	no foot
3		LC40472-001A	←	←	FOOT	fixed with BOTTOM PANEL
4		LC40479-001A	←	←	FOOT SPACER	fixed with BOTTOM PANEL
5	⚠	LC10582-001B	←	LC10582-002B	FRONT PANEL	refer to page 1-8 / no LABELs
6		LC30279-001C	←	←	IR WINDOW	fixed with FRONT PANEL
7	⚠	LC30945-001B	←	←	LENS SPONGE	fixed with FRONT PANEL
8		CM47752-004	←	×	BRAND MARK	fixed with FRONT PANEL
		×	×	PNH104924	HJT LOGO DECAL	
9		QYNSS3000P	←	PNH105694	NUT FASTENER	to fix BRAND MARK
10	⚠	LC30332-007A	←	←	L CAUTION LABEL	fixed with FRONT PANEL
11	⚠	LC10587-001C	←	LC10587-001B	BACK PANEL	refer to page 1-9 / no LABELs, FILTER
12		CM47752-004	←	×	JVC MARK	fixed with BACK PANEL
13		QYNSS3000P	←	×	NUT	to fix JVC MARK
		×	×	LC40111-001A	HJT MARK	
14		LC40672-001A	←	←	LID	fixed with BACK PANEL
15		CM44287-00C	←	←	SCREW	to fix LID
16	⚠	LC31132-001A	←	←	CONTROL PANEL ASS'Y	Including INDICATOR, BOTTON
17	⚠	LC30279-001C	←	←	IR WINDOW	fixed with INDICATOR
18		LC30437-003C	×	←	FCC DOC LABEL	fixed with BACK PANEL
19	⚠	QAR0126-001	←	←	FAN	refer to page 1-9 / used 2 pieces
20		LC30930-001B	←	←	FILTER COVER (BACK PANEL)	fixed with BACK PANEL
21		×	×	LC30796-001A	FILTER HOLDER	fixed with BACK PANEL
22	⚠	LC30505-004A	←	LC30505-003A	FILTER	fixed with BACK PANEL
23	⚠	LC31088-001A	←	←	N.O CAUTION LABEL	fixed with BACK PANEL
24	⚠	LC30502-007A	←	LC30502-006A	DO CAUTION LABEL	
25	⚠	LC10584-001C	←	←	LEFT PANEL	refer to page 1-8 / no OUTLET GRILL
26	⚠	LC20384-001B	←	←	OUTLET GRILL	fixed with LEFT PANEL
27		PNH103843	←	←	SAFETY SWITCH	INTER LOCK SWITCH
28	⚠	LC10583-001C	←	LC10583-001B	RIGHT PANEL	refer to page 1-8 / no LABELs, FILTER
29	⚠	LC20393-001C	←	←	TERMINAL BOARD	fixed with RIGHT PANEL and LVPS
30		LC40567-002B	←	←	ADAPTER LID	fixed with TERMINAL BOARD
31		QYSBSG3008M	←	←	SCREW	to fix ADAPTER LID / used 2 pieces
32	⚠	LC30814-005A	LC30814-004A	LC30814-002A	RATING LABEL	fixed with RIGHT PANEL
33	⚠	QAR0126-001	←	←	FAN	refer to page 1-9 / used 2 pieces
34		LC30795-001B	←	←	FILTERCOVER(RIGHT PANEL)	fixed with RIGHT PANEL
35		×	×	LC30796-001A	FILTER HOLDER	fixed with RIGHT PANEL

		DLA-M4000LU PART No.	DLA-M4000LE PART No.	G4000 PART No.	PART NAME	DESCRIPTION
36	⚠	LC30505-004A	←	LC30505-003A	FILTER	fixed with RIGHT PANEL
37	⚠	PNH103566	←	←	POWER SWITCH	refer to page 1-8
38		LC40439-001C	←	←	OP UNIT	refer to page 1-16
39	⚠	QAR0126-001	←	←	OP UNIT FAN (1)/(2)	fixed with OP UNIT 2 places
40	⚠	QLL0072-001	←	←	LAMP UNIT	refer to page 1-11
41	⚠	QAR0129-001	←	←	LAMP FAN (BLOWER FAN)	refer to page 1-10 / no GASKET
42	⚠	LC30815-001A	←	←	GASKET	refer to page 1-10 / fixed with LAMP FAN
43	⚠	QAL0216-001	←	←	FAN POWER SUPPLY	refer to page 1-12
44	⚠	QAL0217-001	←	←	LAMP POWER SUPPLY(ALPS)	refer to page 1-11
45	⚠	QAL0218-001	←	←	IGNITER	refer to page 1-11
46	⚠	QSW0860-001	←	←	DIFFERENTIAL PRESSURE SWITCH	refer to page 1-12
47	⚠	SXA-1004A	←	←	ANALOG P.W.B. ASS'Y	refer to page 1-13
48	⚠	SXA-1202A	←	←	DPC P.W.B. ASS'Y	refer to page 1-13
49	⚠	SXA-1303A	←	←	DD P.W.B. ASS'Y	refer to page 1-14
50	⚠	SXA-3301A	←	←	DD-SUB P.W.B. ASS'Y	refer to page 1-14
51	⚠	SXA-7001A	←	←	OPERATION P.W.B. ASS'Y	BACK PANEL side
52	⚠	SXA-8002A	←	←	IR P.W.B. ASS'Y	FRONT PANEL side
53	⚠	SXA-9004A	←	←	MAIN POWER P.W.B. ASS'Y (LVPS)	refer to page 1-12 / fixed with inside of MAIN POWER SUPPLY
54	⚠	SXA-0P021B	←	←	STAND-BY POWER MODULE P.W.B. ASS'Y	module on LVPS
55	⚠	SXA-0P002B	←	←	MAIN DRIVE MODULE P.W.B. ASS'Y	module on LVPS
56	⚠	SXA-0P003B	←	←	ACTIVE FILTER MODULE P.W.B. ASS'Y	module on LVPS
57	⚠	QAR0125-001	←	←	FAN	fixed with MAIN POWER SUPPLY
58	⚠	QAL0220-001	←	←	BLACK CORRECTION P.W.B. ASS'Y	refer to page 1-14

PACKING PART LIST

		DLA-M4000LU PART No.	DLA-M4000LE PART No.	G4000 PART No.	PART NAME	DESCRIPTION
1	⚠	QMPE170-335-R	QMPK170-335-R	QMPE170-335-R	POWER CORD	
2		LC30236-001A	←	←	POLY BAG (A)	
3		LC10592-001A	←	←	CUSHION ASS'Y	
4		LC10593-001A	←	←	PACKING CASE ASS'Y	
5		LC30810-005A	LC30810-004A	LC30810-002A	PACKING LABEL	fixed with PACKING CASE ASS'Y
6		CP30903-001	←	←	JOINT	
7		CP30371-00E	←	←	BAND	
8		LC40168-002A	←	←	SHOCK WATCH	fixed with PACKING CASE ASS'Y
		×	×	LC30486-001A	WARRANTY CARD	
9		LC30384-001A	←	←	DESICANT	
10	⚠	LCT0634-001A	LCT0532-001B	LCT0533-001A	INST BOOK	
11		QPC02503510P	←	←	POLY BAG (B)	
12		RM-M4000G	←	RM-M4000	REMOCON UNIT	
13		QAM0247-001	←	←	RM CABLE	
14		R6PY/2S	←	←	BATTERY	
15		QPA03504510P	←	←	POLY BAG (C)	

OPERATING INSTRUCTIONS

DLA-M4000LU
DLA-M4000LE

JVC

DLA-M4000LU D-ILA SUPER PROJECTOR

D-ILA™ SUPER PROJECTOR

DLA-M4000LU

INSTRUCTIONS

No.51666

For customer Use:
Enter below the Serial No. which is located on the side panel of the cabinet. Retain this information for future referenoe.

Model No. DLA-M4000LU

Serial No.

JVC
VICTOR COMPANY OF JAPAN, LIMITED

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Printed in Japan
LCT0534-001A
1199-K-M-Ni

Thank you for purchasing this projector. Before using it, read and follow all instructions carefully to take full advantage of the projector's capabilities.

SAFETY PRECAUTIONS

IMPORTANT INFORMATION

WARNING :
TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION :
To reduce the risk of electric shock, do not remove cover. Refer servicing to qualified service personnel.

This projector is equipped with a 3-blade grounding-type plug to satisfy FCC rule. If you are unable to insert the plug into the outlet, contact your electrician.

FCC INFORMATION (U.S.A. only)
CAUTION: Changes or modification not approved by JVC could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

About burning-in of the D-ILA device

Do not allow the same still picture to be projected for a long time or an abnormally bright video picture to be projected. Do not project video images with high-intensity or high-contrast on a screen. The video image could be burned in to the D-ILA device.
Use special care when projecting video games or computer program images. There is no problem with ordinary video-cassette playback images.

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD**. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these "Important Safeguards" carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.)

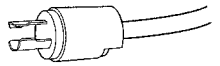
  For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep distance more than 60 cm (19-3/4").

- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
- For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
- Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:
  a) When the power supply cord or plug is damaged.
  b) If liquid has been spilled, or objects have fallen on the product.
  c) If the product has been exposed to rain or water.
  d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e) If the product has been dropped or damaged in any way.
  f) When the product exhibits a distinct change in performance – this indicates a need for service.
- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
- When connecting other products such as VCR's, and personal computers, you should turn off the power of this product for protection against electric shock.
- Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.
- Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
- Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
- Xenon gas is enclosed with high pressure inside the light-source lamp (lamp unit) of this projector. If you drop or impart a shock to the lamp, or discard it as is, there is the possibility of explosion, leading to personal injury. Use special care when handling the lamp. For any unclear points, consult your product dealer.
- Use only the accessory cord designed for this product to prevent shock.

  The power supply voltage rating of this product is AC 220 V~ 240 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

  When it is used by other power supply voltage, power cable must be changed.

  Consult your product dealer.



Power supply voltage: AC 220 V~ 240 V

* DO NOT allow any unqualified person to install the unit.
Be sure to ask your dealer to install the unit (eg. attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

No.51666

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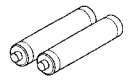
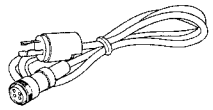
Accessories

The tcllowing accessories are included with this projector. Check for them; if any item is missing, please contact your dealer.

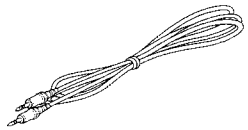
Remote control unit (RM-M4000G)



AA/R6-size dry cell battery (×2)
(for checking operation)



Power code
[approx. 3.35 m (11 ft)]



Remote control cable
[approx. 15 m (49.2 ft)]

Memo

In addition to the above acoessories, an operator manual (this book) and warrantee sheet are included. If any is missing, also contact your dealer.

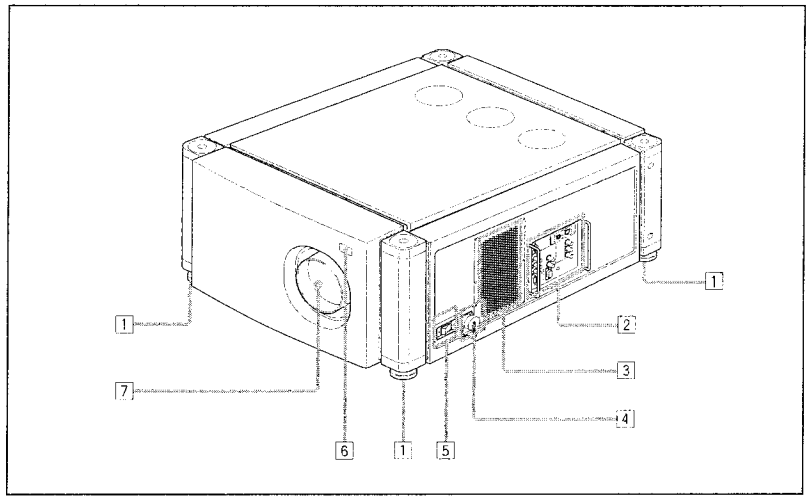
Information on separately sold items

- **Projection lens**
  - GL-M4023SZ — 3 : 1~7 : 1 zoom lens
  - GL-M4015S — 1.5 : 1 fixed-focus lens
- **Video board**
  - PK-G1101D — A boerd to be used for adding composite videc signal input and Y/C (S-Video) function to the projectcr.

DLA-M4000LU
DLA-M4000LE

Controls and Features

Front Side / Top Surface / Right Side



1 Adjustable foot
It is set at the shortest position when shipped from the factory. Turn the foot to make the projector level. Adjustment can be made in the range of ±4° from the vertical and ±5° from the horizontal.

2 Connector panel
For details, refer to "Connector Panel" on page 10.

3 Air intake area (filter)
Air is taken in through this area to cool the light-source lamp. If this area is blocked or if something that obstructs taking in or exhausting air is placed around the projector, heat may build up inside and could cause a fire. For details, refer to "Precautions for Installation" on page 14.

CAUTIONS

- Be careful as paper, cloth or soft cushion could be drawn in if placed nearby. Do not block the intake area, or heat may build up and could cause a fire.
- Clean the filter periodically. For details, refer to "Cleaning and Replacing the Filter" on page 59.
  Deposition of dirt on the filter works to reduce the cooling effect, causing heat to build up inside, which could cause a fire or malfunction.

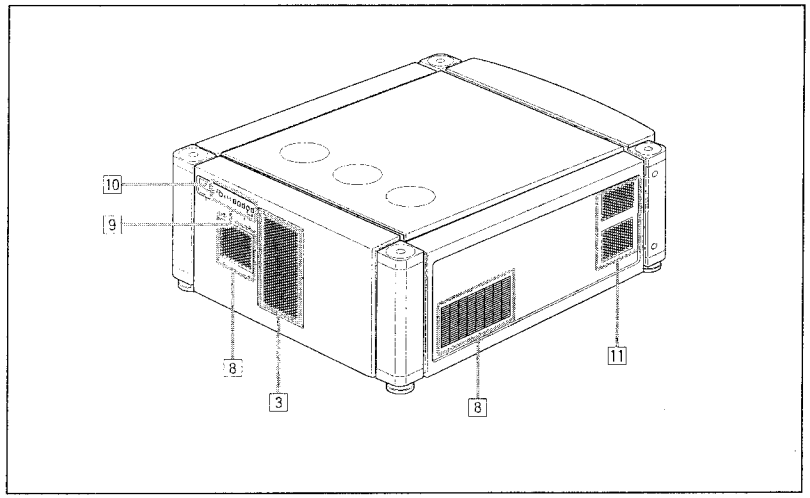
4 AC IN (power input) terminal
This is the power input terminal where the supplied power cord is connected. For details, refer to page 23.

5 MAIN POWER switch
This is the main power switch. When it is turned on, the projector goes into stand-by state, and the STAND BY indicator on the control panel comes on.
ON [I]: The main power turns on.
OFF [○]: The main power turns off.

6 Remote sensor
When operating with the remote control, aim it toward this sensor. An additional remote sensor is provided on the back of the projector. The effective operating distance of the remote control is 10 m from each of the sensors. The effective operating range of angles is 50° left and right, and 15° up and down.

7 Lens mount
Attach a projection lens separately sold to this mount.
GL-M4023SZ 3 : 1~7 : 1 zoom lens
GL-M4015S 1.5 : 1 fixed-focus lens
For information on attaching the lens, consult the dealer or service center who performed the installation and adjustments of your projector.

Left-hand side / Back Side



8 Exhaust vents
Vents for cooling fans through which warm air comes out.

9 Control panel
For details, refer to "Control Panel" (page 8 and 9).

10 Remote sensor
When operating with the remote control, aim it toward this sensor. An additional remote sensor is provided on the front of the projector. The effective operating distance of the remote control is 10 m from each of the sensors. The effective operating range of angles is 50° left and right, and 15° up and down.

11 Air exhaust port
Warm air comes out of this port from the cooling fan for the light-source lamp power supply. This fan continues running as long as the MAIN POWER switch is on.

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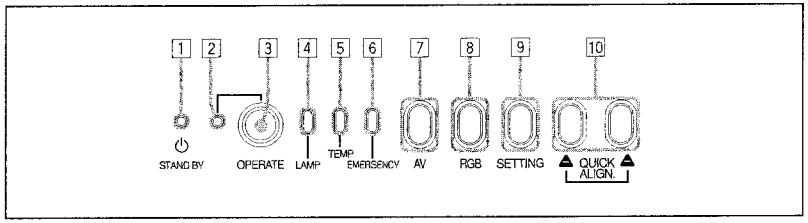
Control Panel



1 STAND BY indicator
ON : When in stand-by mode.
Blinking : When in cool-down mode.

CAUTIONS

- The cool-down mode continues for about 20 seconds, during which projection cannot be started again. After the cooling-down period, the projector goes into stand-by mode, but the cooling fans will continue to run for about 10 minutes more before they stop (exept the cooling fan for the light-source lamp power supply which continues running as long as the MAIN POWER switch is on).
- The purpose of the cool-down mode is to prevent inner parts from being deformed or broken by heat from the heated lamp as well as to prolong the life of the lamp. Do not turn oft the main power switch while in the cool-down mode. Also, do not block any of exhaust openings while in cool-down mode.

2 OPERATE indicator
ON: When the projector is in operation (projecting)

3 OPERATE button
When the projector is in the stand-by mode, press this button for one or more seconds, and the main power switch is turned on, causing the OPERATE indicator te light. Press it again, and the projector goes into the cool-down mode, then stand-by mode.

Memo

While in the eool-down mode:
If you press the OPERATE button, the projector is not tuned on.

4 Lamp indicator
ON : After the light-source lamp has been used for more than approx. 900 hours.
Blinking : Replace the lamp. (Ask the dealer where you purohased your projector to replace the lamp.)

5 TEMP indicator
ON : The temperature inside the projector has abnormally risen.

Note

- While the TEMP indicator is on (during abnormal temperature), the power is automatically cut off, and an emergenoy mode is shown (with the EMERGENCY indicator blinking).

6 EMERGENCY indicator
Blinking: Something abnormal has occurred with the projector.

Memo

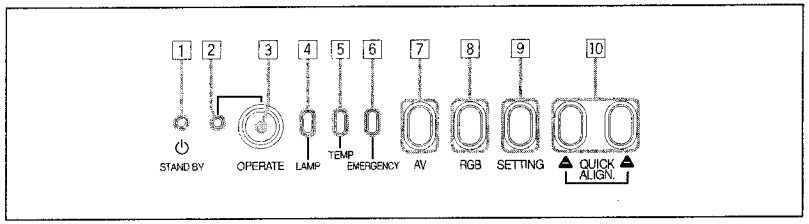
About the emargency mode:
The emergency mode is shown when the following anomalies have occurred with the prejector (the EMERGENCY indicator blinks). In the emergency mode, projection is automatically interrupted and the cooling fans operate for about 10 minutes (except the cooling fan for the light-source lamp power supply which continues running as long as the MAIN POWER switch is on).

- **When the filter is clogged.**
- **When the light-source lamp has suddenly gone off.**
- **When the fans have stopped.**
- **When the temperature inside has risen abnormally high.**

CAUTION

- **When an emergency mode is shown:**
  After the cooling fans (except the one for the light-source lamp power supply) have stopped, turn off the main power switch and unplug the power cord from the wall outlet.
  Check that the filter covers are oorrectly installed. Then, plug in the power cord again and try operating the projector.
  If it goes into an emergency mode again, after the cooling fans have stopped, turn off the main power switch, unplug the power cord, and call your dealer for repair.

Control Panel (Cont.)



7 AV button
Use this button to select a device such as a video deck connected to the EXT. IN terminal of the projector. Each time you press the button, the device selected changes as follows:

Y/C* ⟶ VIDEO* ⟶ YPBPR

* Y/C and VIDEO can be used only when a video board separately sold has been installed.

8 RGB button
Use this button to select a device connected to the RGB -1 or -2 terminals. Each time you press the button, the selection changes as follows:

RGB 1 ⟷ RGB 2

9 SETTING button
Use this button to call up the setting menu. For details, refer to "Making Basic Settings" on page 30.

10 QUICK ALIGN. button
While a menu screen is shown, use this button to adjust the values for the item selected. When nc menu is shown, the quick alignment function works.

- **When a menu is shown**
  ▲ button: The value for the selected item increases.
  ▲ button: The value for the selected item decreases.
- **When no menu is shown**
  Press the ▲ button and ▲ button at the same time: QUICK ALIGNMENT is displayed on the screen and the quick alignment function works (TRACKING, PHASE, H. POS. and V. POS. are automatically adjusted). When the adjustment is finished, the display goes off automatically.

Memo

The quiek alignment function :
- Works for computer input (RGB- 1 and - 2 input terminals) signals.
- Does not work for videc input (EXT. IN input terminal) signals.

CAUTION

- Automatic adjustment with the quick alignment function should be done on a bright still-picture screen. This function may not work correctly on a dark screen or motion-picture screen. If adjustment with this function is not satisfactory, adjust TRACKING, PHASE, H. POS. and V. POS. manually (see pages 30, 36 and 37).

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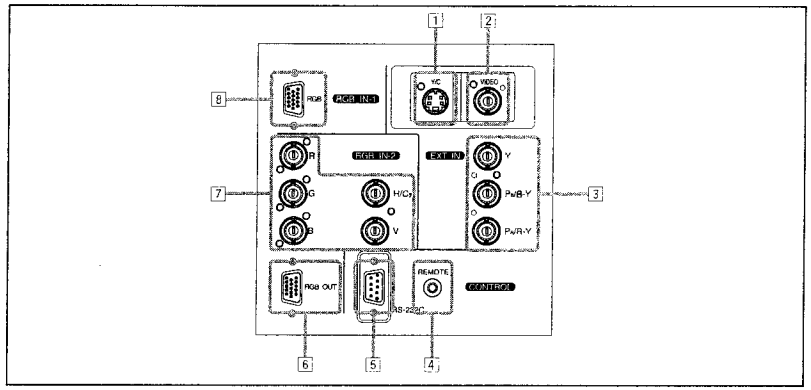
DLA-M4000LE

Connector Panel



1 Y/C (S video) input terminal (Mini DIN 4 pin)
Connect this terminal to the S video output terminal of a video deck, etc.
* This terminal can be used if a video board (PK-G1101D) sold separately has been installed. The terminal was not provided when the projector was shipped from the factory.

2 VIDEO (composite video) input terminal (BNC)
Connect this terminal to the composite vidoo output terminal of a video deck, etc.
* This terminal can be used if a video board (PK-G1101D) sold separately has been installed. The terminal was not provided when the projector was shipped from the factory.

3 Y, PB/B-Y, PR/R-Y input terminals (BNC)
These are input terminals for component (Y, B-Y, R-Y) signals or DTV-format (Y, PB, PR) signals.
Device with component signal output terminals, such as for NTSC and DTV-format, can be connected.
* For details about DTV-format signals (480i, 480p, 720p, 1080i) compatible with this unit, refer to page 66.

4 REMOTE terminal (mini jack)
This terminal is used to directly connect the remote control to the projector. Use the remote control cable supplied. An infrared remote control extension unit can also be connected to the jack.

5 RS-232C terminal (D-sub 9 pin)
This is a RS-232C interface-specified terminal. This projector can be controlled by a computer connected externally.

6 ROB OUT (RGB output) terminal (D-sub 3-row 15 pin)
The computer input signal projected on the screen is output. A display unit can be used by connecting it to this terminal.

7 RGB IN (RGB input) -2 terminal (BNC)
These are input terminals for analog RGB signals, vertical sync (V) signals, and horizontal sync (H) signals / composite signals(Cs). Devices which have analog RGB signal output terminals can be connected.
*** Input of external sync signals is automatically detected.**
Detection of H/V signals or Cs signals causes automatic switch to external sync. The priority order is H/V > Cs.

CAUTION

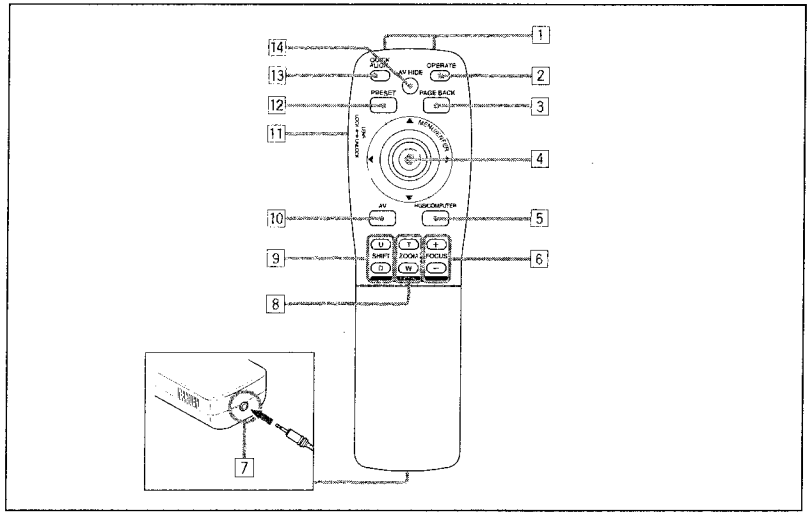
- When computer-related signals are input, the uppermost edge of the screen may appear bowing if the sync signal input is composite sync (Cs) or G on sync signal. In that case, use separate sync signals for vertical sync (V) and horizontal sync (H).

8 RGB IN (RGB input) -1 terminal (D-sub 3- row 15 pin)
This is an input terminal (PC) dedicated for computer signals (RGB video signals and sync signals).
Connect the display output terminal of the computer to this terminal. When a Macintosh or PC-9801/9802 series computer is to be connected, use a suitable conversion adapter separately available.

CAUTION

- When computer-related signals are input, the uppermost edge of the screen may appear bowing if the sync signal input is composite sync (Cs) or G on sync signal. In that case, use separate sync signals for vertical sync (V) and horizontal sync (H).

Remote Control Unit



1 Remote control's signal transmitter

2 OPERATE button
To turn on or off the power, press this button for one or more seconds.
* About 30 seconds after the power has turned on, video image will appear on the soreen.

3 PAGE BACK button
While no menu is displayed, pressing this button causes a direct channel to be displayed.

Memo
Direct channel display:
A direct channel display allows you to switch between channels which have lines and sources registered. For details, refer to "Switching channels using a direct channel" (page 52).

4 MENU/ENTER button
Use this button to display the main menu, or while the main menu is displayed, use the button to select an item to adjust or make adjustment. While the main menu is displayed, pressing MENU/ENTER displays a details setting (submenu) if the selected item has a details setting.
For how to operate the buttons, see page 13.

5 RGB / COMPUTER button
Use this button to select the devices connected to the projector's RGB IN (RGB input) -1 and -2 input terminals. Each time you press the button, the selection changes as follows: RGB 1 ⇄ RGB 2

6 FOCUS (+/–) button
Use these buttons to adjust the focus of the projected picture.
+: The focus point becomes more distant.
–: The focus point becomes nearer.

7 REMOTE terminal
Use a remote control cable to connect between the projector and the remote control. For details, refer to "Connecting to Devices which Control the Projector" on page 22.

8 ZOOM (T/W) button
Use these buttons to increase or decrease the screen size. (They can only be used when a zoom lens is used.)
T: The screen size decreases.
W: The screen size increases.

9 SHIFT (U/D) button
Use these buttons to adjust the height of the projection soroen when projectors are used in a stack configuration.
U: Moves the screen upwards.
D: Moves the screen downwards.

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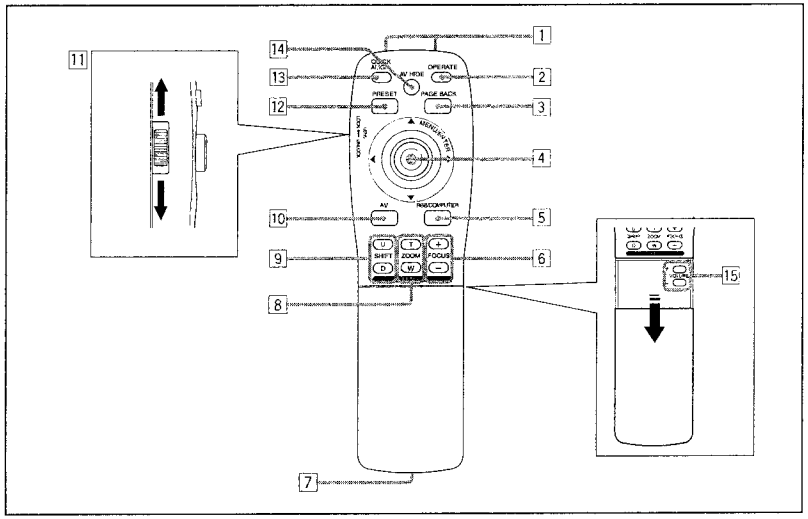
Remote Control Unit



10 AV button
Use this button to select the devices such as a video connected to the projector's AV IN (EXT. input) terminal. Each time you press the button, the selection changes as follows:

Y/C* ⟶ VIDEO* ⟶ YPBPR

* Y/C and VIDEO can be used only when a video board separately sold has been installed.

11 LENS LOCK ⟷ UNLOCK switch
With this switch set at the LOCK position, adjustment operations (focus, zoom or shift) with the remote control are disabled, preventing adjustment contents from baing inadvertently ohanged whila the remote control is baing used. When adjustmant is neaded, set the switoh to the UNLOCK position.

12 PRESET button
While making adjustment on the main cr setting menu, use this button to reset the setting of the selected item to the factory-set value. This button works only for numerical settings and does not work for switching ON to OFF.

13 QUICK ALIGN. (Quick Alignment) button
Use this button to automatically adjust TRACKING, PHASE, H. POS. and V. PQS. of the projected video. During the automatio adjustment, QUICK ALIGNMENT appears on the screen, and disappears after it is finished.

Memo

Quick alignment function:
Does not work for video input (EXT. IN input terminal) signals.
Works only for computer-related (RGB-1 and-2 input terminals) signals.

CAUTION

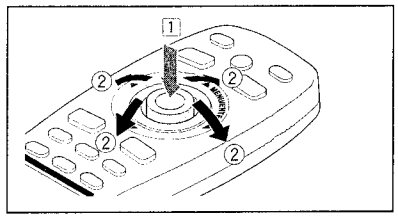
- Automatic adjustment with the quick alignment function should be done on a bright still-picture screen. This function may not work correctly on a dark screen or motion-picture screen. If adjustment with this function is not satisfactory, adjust TRACKING, PHASE, H. POS. and V. POS. manually (see pages 30, 36 and 37).

14 AV HIDE button
Use this button to turn off the video image temporarily. Pressing it again makes the video image to resume.

15 Not used with this projector

MENU / ENTER (Menu Operation) Button

The remote control supplied with this projector has only one button to navigate through the menus. Pressing the menu operation button too strongly may cause an incorrect operation. So, before you use the button in an actual situation, have some practice to make yourself familiar with using the button.



1 When using the MENU/ENTER button as a menu operation button :
Press the button down straight when displaying the main menu. While the main menu is displayed, if the selected item has a details setting (submenu), pressing the button will cause the submenu to be displayed.

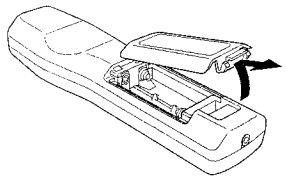
2 When using the MENU/ENTER button as a cursor moving button:
Press the button toward one of the ▲/▼/◄/► marks. While the main menu is displayed, use the button to select an item to adjust or make adjustment.

Installing Batteries

Install batteries in the remote control. If the remote control has started to work erratically, replace the betteries.

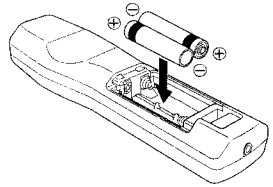
1 Open the back cover.

Open the back cover in the direction of the arrow.



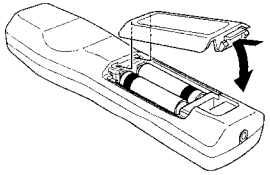
2 Install the batteries.

Place the two batteries (AA/R6-size) supplied in the remote control as illustrated below.



3 Close the back cover.

First fit the claw on the back cover into the case, then close the back cover in the direction of the arrow.



Precautions for using batteries

If batteries are used incorrectly, they may crack or leak liquid. This could cause a fire, burn, malfunction, or staining or damaging the surrounding.
Beware of the following:

- Do not mix new and old batteries.
- Do not mix different types of batteries as they differ in characteristics.
- Place batteries so they match the polarities indicated: (+) to (+) and (–) to (–).
- Be sure to put the minus (–) end in first to avoid short-circuiting.
- Use only designated batteries.
- Remove the batteries if not used for a prolonged period of time.
- When the batteries are exhausted, replace them immediately. Otherwise, liquid could leak, or malfunction could occur due to leaked liquids. If the leaked liquid contacts the skin, wipe it off with a cloth, otherwise the skin could become rough.
- Do not put batteries into fire or try to recharge them.
- Batteries run for six months to one year in normal use. But the batteries supplied are for confirming operation and may not run that long. When the remote control starts failing to work properly, replace the batteries with new ones.

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Installing the Projector

Precautions for Installation

CAUTIONS

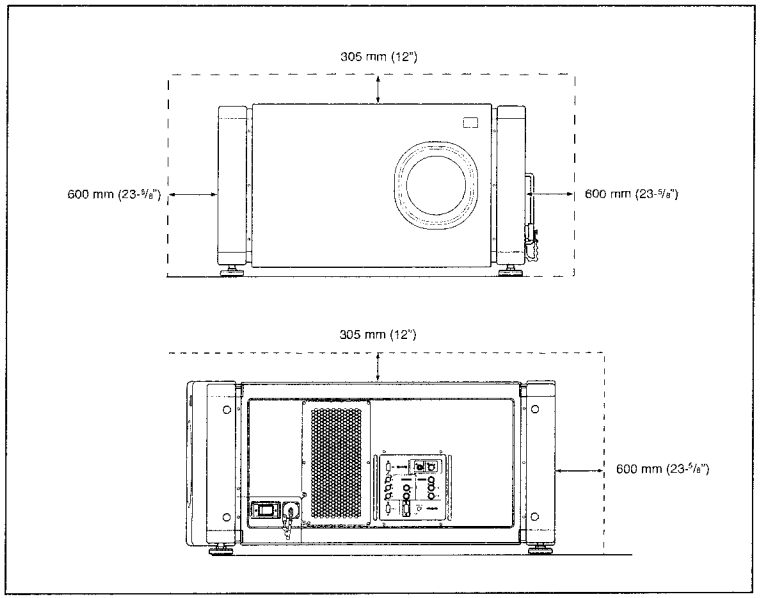
- **Since the projector weighs approx. 70 kg (154 lbs.), be sure to use four or more people when lifting or moving it; otherwise, the projector could possibly drop, causing personal injury and/or damage to the projector.**
- **Do not install the projector in the following places :**
  - There is much water, humidity or dust.
  - The projector may be subjected to oil smoke or cigarette smoke.
  - On a soft surface such as a carpet or cushion.
  - The projector may be subjected to direct sunlight.
  - Temperature is high or humidity is low.

  Allowable operation temperature range: + 5°C to + 40°C (41°F to 104°F)
  Allowable relative humidity range: 90% or less (no condensation)
  Allowable storage temperature range: -5°C to +60°C (23°F to 140°F)

■ **When installing the projector, observe the followings:**

- **Do not use the projector placed on its side.**
  Avoid using the projector placed on its side. This could cause a malfunction.
- **Use the projector within the installed angle.**
  Avoid using the projector inclined ±5° or more right-to-left or left-to-right. This could cause color variation or harm the lamp life.
- **Do not block the exhaust vents.**
  Do not use a cover which encloses the projector air-tight or blocks the exhaust vents. Allow sufficient space around the projector. When the projector is enclosed in a space of the following dimensions, use an air conditioner so the temperature inside becomes equal to the outside temperature.

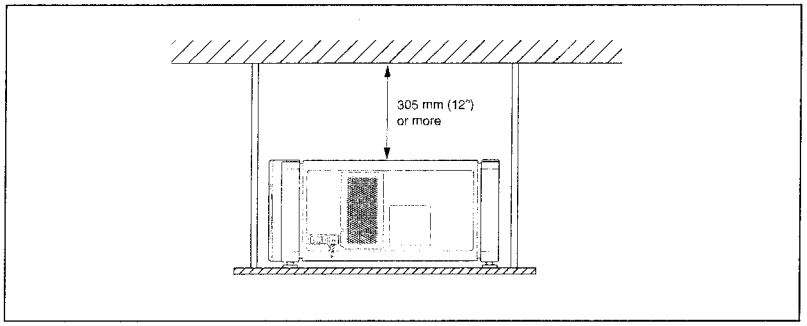
Allowable minimum space required



Precautions for Installation (Cont.)

■ **Observe the following points when installing the projector by hanging it from the ceiling**

- To prevent falling or overturning, it is recommended that the projector be fixed to its stand with bolts.
- When mounting the projector to the ceiling, first install a special shelf and then set the projector on it securely. For safety and maintenance purposes, a suitable facility is necessary to easily lift and lower the projector from the shelf for maintenance access.

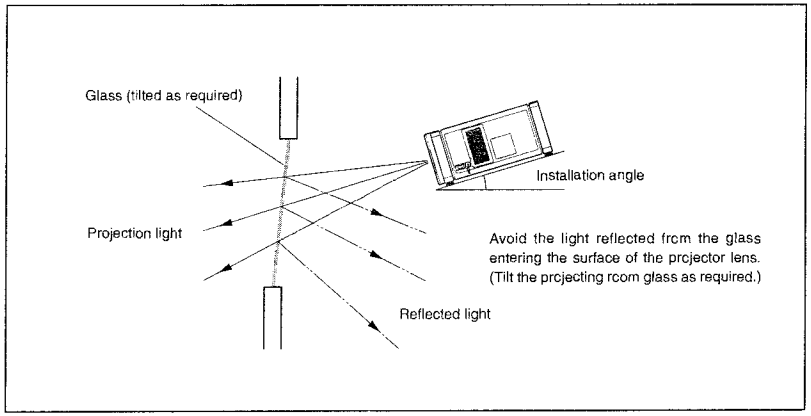


Relationship relative to Glass Surface

■ **Light energy decreases as it passes a glass. So, no more than one glass should be used in the projecting room.**

■ **Avoid using panes of glass as much as possible.**

■ **Pay attention to the angle of the glass and the installed angle of the projector so that the light emitted from the projector does not come back into the lens after reflection.**


Glass (tilted as required)
Installation angle
Projection light
Avoid the light reflected from the glass entering the surface of the projector lens. (Tilt the projecting room glass as required.)
Reflected light

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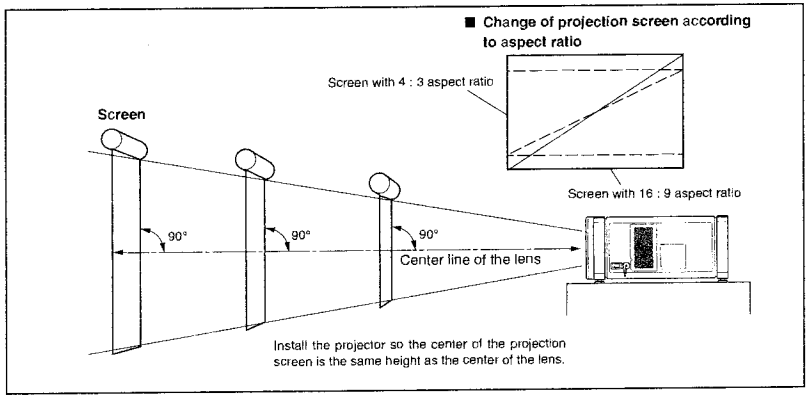
Lens Shift Function


■ Change of projection screen according to aspect ratio
Screen with 4 : 3 aspect ratio
Screen
Screen with 16 : 9 aspect ratio
90°
90°
90°
Center line of the lens
Install the projector so the center of the projection screen is the same height as the center of the lens.

The separately sold lenses used on the projector have a lens shift function. With the lens used, you can adjust the projected image vertically using the setting menu or the remote control's SHIFT button U or D.
When using the projectors in a stack configuration (stacked one over another), make adjustment so that the picture of one projector overlays exactly that of another using the lens shift function.
For detailed adjustment procedures, refer to "Operating the Setting Menu" (page 30) and "Controls and Features" (page 11).
For maximum amount of shift, refer to "Maximum Amount of Shift" (page 17).
(When the lens needs to be adjusted in horizontal angles, consult your dealer or service center.)

Note

• Some of the lenses (except GL-M4C23SZ and GL-M4015S) to be introduced in the future may not feature the lens shift function.

Memo

Stack configuration:
Up tc four projectors can be stacked and used together (stack configuration).
Using two or more projectors together, high image brightness can be attained. This allows you to project sufficiently bright image in a fairly large auditorium or relatively bright place without using a heavy-duty projector.

CAUTION

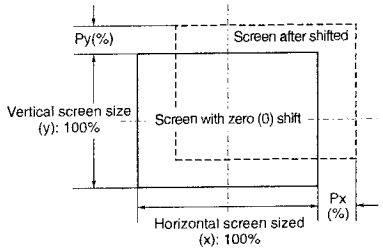
Te prevent damage to the projector during shipment, a shift oontor lock pin was used to fix the lens mechanism when the projector was shipped out the factory. If you implement "SHIFT LENS" on thc setting menu and the lens does nct either move up or down, the shift center lock pin may not have been removed. Consult your dealer or service center.

CAUTIONS and NOTES

- When installing the screen, use a 4 : 3 aspect ratic picture.
  (A 16 : 9 aspect ratio picture is projected based on the width of the range in which a 4 : 3 aspect ratio picture is projected.)
- The diagonal length of a 16 : 9 aspect ratio picture is abcut 91.8% that of a 4 : 3 aspect ratio picture. This value is a guide and should be used as a reference.
- When projecting at the maximum prcjection distance, we recommend that the projector be used with the zocm on the Tele (T).
- If sunlight or lamp light strikes the projection screen directly, the picture becomes whitish and dim. Be sure to use a curtain, etc. tc shield the light.
- Trapezoidal distortion may not be corrected.
  Adjust the projector within the range of angle adjustment (up/down adjustment angle: +4°; horizontal adjustment angle: ±5°) so that it is set up level.

Lens Shift Function (Cont.)

Maximum amount of shift
The maximum amount of vertical shift is restricted by the amount of horizontal shift made.
The amount of shift is defined as follows:
With the screen width taken as 1, horizontal shift is defined as a ratio (%) of the screen width, while with the screen height taken as 1, vertical shift is defined as a ratio (%) of the screen height.



Relational tahle for maximum shift amounts (aspect ratio 4 : 3)

Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)
0.000	31.968	10.000	28.102	20.000	23.272	30.000	17.268	40.000	9.739
1.000	31.621	11.000	27.666	21.000	22.729	31.000	16.582	41.000	8.881
2.000	31.265	12.000	27.219	22.000	22.173	32.000	15.900	42.000	8.000
3.000	30.901	13.000	26.762	23.000	21.606	33.000	15.192	43.000	7.096
4.000	30.528	14.000	26.295	24.000	21.026	34.000	14.467	44.000	6.167
5.000	30.146	15.000	25.818	25.000	20.434	35.000	13.725	45.000	5.213
6.000	29.756	16.000	25.331	26.000	19.828	36.000	12.966	46.000	4.231
7.000	29.356	17.000	24.833	27.000	19.209	37.000	12.189	47.000	3.221
8.000	28.948	18.000	24.324	28.000	18.577	38.000	11.392	48.000	2.180
9.000	28.530	19.000	23.803	29.000	17.930	39.000	10.576	49.000	1.107
								50.000	0.000

Relational table for maximum shift amounts (aspect ratio 16 : 9)

Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)
0.000	31.968	10.000	26.609	20.000	19.421	30.000	9.747
1.000	31.503	11.000	25.980	21.000	13.581	31.000	8.599
2.000	31.234	12.000	25.333	22.000	17.716	32.000	7.410
3.000	31.523	18.000	24.666	23.000	16.824	33.000	6.178
4.000	30.013	14.000	23.980	24.000	15.905	34.000	4.900
5.000	29.491	15.000	23.274	25.000	14.958	35.000	3.573
6.000	28.949	16.000	22.546	26.000	13.981	36.000	2.193
7.000	28.889	17.000	21.600	27.000	12.973	37.000	0.756
8.000	27.813	18.000	21.030	28.000	11.933	37.509	0.001
9.000	27.220	19.000	20.237	29.000	10.858		

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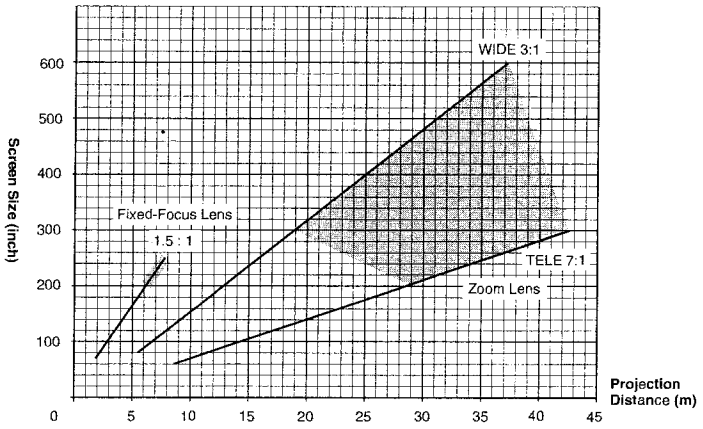
Projection Distances and Screen Sizes

Lenses that can be used are a 3 : 1 ~ 7 : 1 zoom lens and a 1.5 : 1 fixed-focus lens. With a zoom lens used, you have a wider latitude in selecting projection distance and installation space than with a fixed lens.
For how to install the lens, consult the dealer who installed and adjusted your projector or service center.

Relationship of screen width vs. projection distance



In the shaded areas ▒▒ in the above graph, the projected image may be partially distorted or missed out depending on the distance between the projector and the screen. To project an image with no image distortion or missing, we recommend you to use the projector in the areas defined with solid lines in the graph.

Adjustable range of the lens

Lens	Screen Size (Type)	Projection Distance (m)	Remarks
GL-M4023SZ zoom lens	80 – 300 (80 – 600)	5.06 – 16.65 (5.08 – 37.19)	3:1 wide
	80 – 200 (60 – 300)	8.65 – 28.56 (8.65 – 42.79)	7:1 tele
GL-M4015S fixed-focus lens	69 – 208 (65 – 250)	2.09 – 6.50 (1.97 – 7.83)	———

The numbers in ( ) represent the minimum to maximum adjustable range.

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Connecting to Various Devices

• Before connection, be sure to turn off the projector and connected devices.
• Read the manual which comes with each device thoroughly.

Signals that Can Be Input to the Projector

The following signals can be input to the projector:

■ Video signals

(1) Response to color systems

Input terminal \ Color system	NTSC 480i	NTSC4.43	PAL	SECAM
VIDEO*3	○	○	○	○
Y/C*3	○	○*1	○	-----
Y, PB/B-Y, PR/R-Y	○*2	○*2	○*2	○*2
G, B, R, H/CS, V	○*2	○*2	○*2	○*2

*1 : Responds if Y/C output is available.
*2 : Signifies that component signals ("Y, PB, PR" / "Y, B-Y, R-Y" / "G, B, R, H/Cs, V") conform to the signal timing (synchronization and video period) of each color system. The color systems are used for convenience only.
*3 : To use these terminals, a video board (separately sold) is required.

(2) Response to double density (*1), high-vision signals

Input terminal	NTSC*2	PAL*3	High-vision signal
Y, PB/B-Y, PR/R-Y	○	○	○
G, B, R, H/CS, V	○	○	○

*1 : Signals whose density of scanning lines/field is twice as high.
*2 : Responds to signals whose horizontal scanning frequency is 31.5 kHz. NTSC can be made twice as dense by a line doubler (separately available: recommended article). Also, possible to respond to fully-specified, decoded 525P progressive signals.
*3 : Responds to signals whose horizontal scanning frequency is 33.5 kHz. PAL can be made twice as dense by a line doubler (separately available: recommended article).

Notes
• DTV-format signals (480i, 480p, 720p, 1080i) can be input into this unit (Y, PB/B-Y, PR/R-Y input terminals).
For details about DTV-format signals (460i, 480p, 720p, 1060i) compatible with this unit, refer to paga 66.

■ Computer signels

• Signals with the following resolutions can be input to the input terminal of RGB IN-1 (PC) or RGB IN-2 (G, B, R, H/Cs, V). (The following signals are preset.)

Screen resolution (standard name)	Horizontal frequenoy	Vertioal frequency	Soanning method
640 × 400 (PC-9801)	24.6kHz	58.4Hz	Non-interlace
640 × 350 (VGA1)	31.5kHz	70.1Hz	Non-interlace
640 × 480 (VGA3)	31.5kHz	59.9Hz	Non-interlace
640 × 480 (Macintosh 13")	35.0kHz	66.7Hz	Non-interlace
640 × 480 (VGA VESA)	37.5kHz	75.0Hz	Non-interlace
800 × 600 (SVGA1)	37.9kHz	60.3Hz	Non-interlace
800 × 600 (SVGA2)	48.1kHz	72.2Hz	Non-interlace
832 × 624 (Macintosh16")	49.7kHz	74.6Hz	Non-interlace
1024 × 768 (XGA1)	48.4kHz	60.0Hz	Non-interlace
1024 × 768 (XGA2)	68.5kHz	70.1Hz	Non-interlace
1024 × 768 (Macintosh 19")	60.2kHz	74.9Hz	Non-interlace
1152 × 870 (Macintosh 21")	66.7kHz	75.0Hz	Non-interlace
1280 × 1024 (SXGA1)	64.0kHz	60.0Hz	Non-interlace
1280 × 1024 (SXGA2)	70.6kHz	67.0Hz	Non-interlace
1360 × 1024 (SXGA3: Mac Board)	80.0kHz	75.1Hz	Non-interlace

Notes
• Interlace signals are not handled.
• Some signals other than listed above can be displayed. But they require adjustment. Even some of the signals listed above may require adjustment depending on the video board used.
• When a signal other than listed above is input, the screen could be partially erased or an unneeded fold-over screen could appear.
• Even signals in the frequency range that can be input may not be displayed normally depending on the type of the signal.
• Composite sync.(Cs) and G on sync. signals can not handled depending on the devices connected.

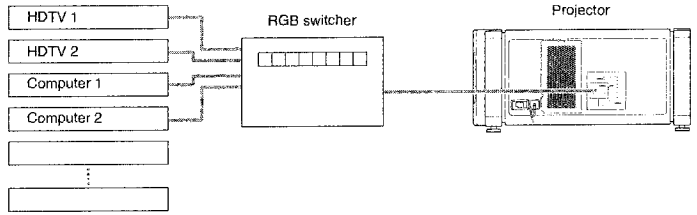
Examples of System Configuration

Before connection, be sure to turn off both the projector and the equipment to be conneoted.

• Also, read the manuals which came with the equipment.

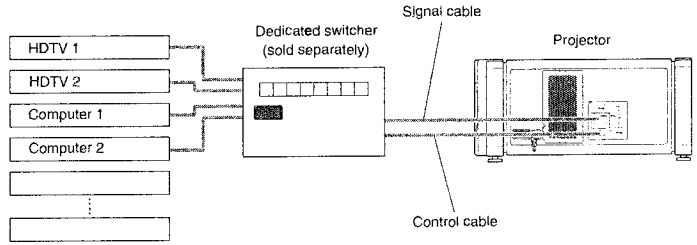
Example of a basic system

• By connecting an RGB switcher, a variety of input sources can be input to the projector as RGB signals. Using the remote control supplied, you can select the channel for an input source and project an image optimal to the source.



Example of a dedicated switoher system

• When used in combination with a dedicated switcher, the projector has its channels automatically switched in unison as the input to the switcher is changed.
For information on dedicated switchers, consult the dealer who performed the installatıcn and adjustments or a local service center.



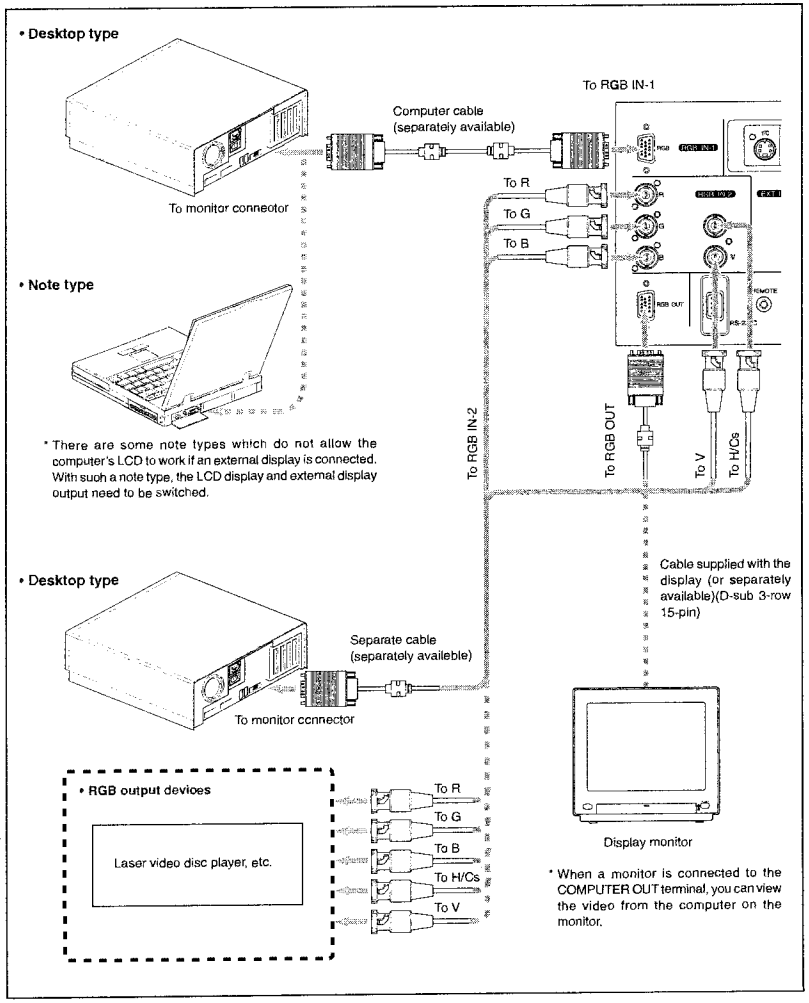
Notes

Video image displayed on devices whose image signal is unstable, such as a video deck, may be disturbed. (This oan ccour when the projeotors is not yet adjusted at the time of installation, or when a new device is added.)
In such a case, ask the dealer where you purchased the projector or a local service center to adjust the projector.
It is recommended that you use a video deck that is equipped with an image signal correction function (such as time base corrector or frame synchronizer).

Connecting to Computer Devices

Before connection, be sure to turn off both the projector and computer devices.

• Read the manual which comes with each device thoroughly.
• Use the separately available computer connection cable. Also, prepare cables required for connecting the devices connected.


• Desktop type
To monitor conneotor
Computer cable
(separately available)
To RGB IN-1
To R
To G
To B
• Note type
* There are some note types whtch do not allow the computer's LCD to work if an external display is connected. With such a note type, the LCD display and external display output need to be switched.
To RGB IN-2
To RGB OUT
To V
To H/Cs
Cable supplied with the display (or separately available)(D-sub 3-row 15-pin)
• Desktop type
Separate cable
(separately availeble)
To monitor connector
• RGB output devioes
Laser video disc player, etc.
To R
To G
To B
To H/Cs
To V
Display monitor
* When a monitor is connected to the COMPUTER OUT terminal, you can view the video from the computer on the monitor.

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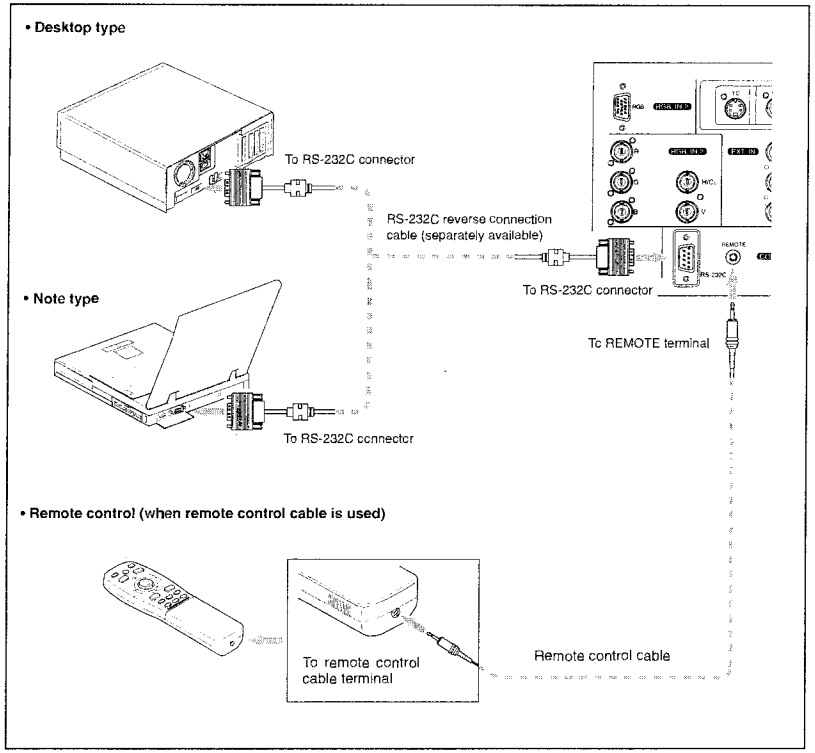
Connecting to Devices which Control the Projector

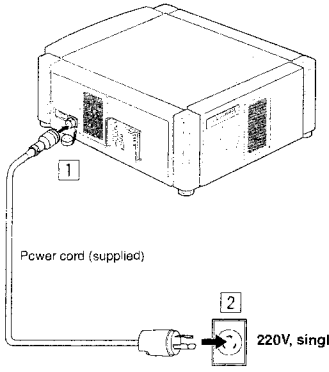
Before connection, be sura to turn off both the projeotor and devices to he connected.

- Read the manual thoroughly which comes with each device to be connected.
- By connecting a computer to the RS-232C terminal, you can control the projector.
  * For details, consult an authorized your dealer or service center.
- If you connect the cable terminal of the remote control and the REMOTE terminal of the projector with a remote control cable, you can use the remote control in a place or at an angle from which the infrared beam cannot reach the projector.


• Desktop type
To RS-232C connector
RS-232C reverse connection cable (separately available)
To RS-232C connector
To REMOTE terminal
• Note type
To RS-232C connector
• Remote control (when remote control cable is used)
To remote control cable terminal
Remote control cable

Connecting the Power Cord (Supplied)

After all devices have finished being connected, connect the projector's power cord. At this time, do not turn on the MAIN POWER switch yet.



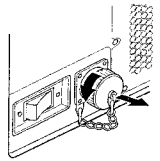
CAUTION

To prevent fire and electric shook, observe the following:

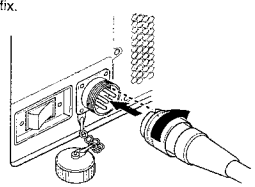
- When you do not use devices, pull out their power cords from wall outlets.
- Do not connect the devices with power oords other than supplied.
- Do not use voltage other than the power voltage indicated.
- Do not soar, damage, or work on the power cords. Also, do not put a heavy object on, heat or pull the power cords, otherwise they may be damaged.
- Do not insert or pull out the plugs with a wet hand.

1 Insert the supplied power cord into the power input terminal (AC IN ~) of the projector.

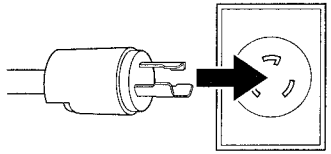
1. **Remove the power input terminal cover.**
   The cover is a screwed type. Turn the cover in the direction of the arrow to remove.



2. **Insert the projector plug of the supplied power cord into the power input terminal of the projector.**
   Align the groove on the projector plug of the power cord with the elaw on the power input terminal of the projector, and push the plug in firmly.
   After that, turn the ring on the plug in the direction of the arrow to fix.



2 Insert the plug of the supplied power cord into a wall outlet, and turn the plug to right to fix.

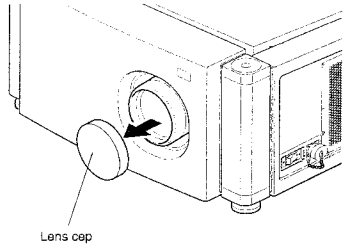


CAUTION

- Sinoe the power requirement of the projeotor is high, be sure to insert the power plug directly into a wall outlet.
- This projeotor requires a single phase, 3-wire, 220V wall outlet.

■ To use the projector

- **Remove the lens oap.**



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When Turning On the Devices Connected to the Projector

Turn on the switches of the projector and the devices connected in the following order.
Skip over unconnected devices if there is any.

Power switch of the monitor of the computer which provides input to the projestor

↓

Peripheral devices of the computer which provides input to the projector
(Hard disk, magneto optical disk, scannor, etc.)

↓

Power switch of AV devices which provide input to the projector

↓

Projector itself

↓

Power switches of devices to which the projector provides output
(AV devices and display monitor)

↓

Power switch of the computer which provides input to the projector

* When turning off the power switches, do so in the reverse order.

CAUTIONS and NOTES

Do not turn off the MAIN POWER switch suddenly while the projector is being usad or immediately after it has been used. This could cause a malfunction.

- Since the projector uses a high-intensity lamp and is heated to high temperature, cooling fans are operating even during projection. Sc, after use, the cooling fans continue to run until the light-source lamp is sufficiently cooled down after the OPERATE button was pressed. During the cooling-down, never turn off the main power switch. Turn it off only after the cooling fans (except the one for the light-source lamp power supply) have stopped running.
  (The cooling fans will run for about 10 minutes after the STAND BY indicator has changed from flashing (for about 20 seconds) to steady lighting.)
- If you press the OPERATE button immediately after the light-scurce lamp lights, it takes about 30 seconds for the lamp to go off. To turn the lamp on again, wait 20 seconds or more before pressing the OPERATE button.

When the TEMP indicator lights, the power turns off automatically.

- While the light-source lamp is on, if an abnormal temperature rise is detected, the TEMP indicator comes on, the power is automatically cut off, and the projector's EMERGENCY indicator blinks (goes into an emergency mode).

When the EMERGENCY indicator blinks, turn off the main power ewitch after tha fans have stopped running.

- If the following abnormality occur to the projector, it goes into an emergency mode (the EMERGENCY indicator blinks).
  When the projector goes into an emergency mode, it stops projecting automatically and the cooling fans will continue to run for about 10 minutes more before they stop (except the cooling fan for the light-source lamp power supply which continues running as long as the MAIN POWER switch is on).
  – When the fans stop running.
  – When the temperature inside rises abnormally high.
- When the projector goes into an emergency mode:
  After the fans have stopped, turn off the MAIN POWER switch and pull out the power cord. After that, re-insert the power cord and try to operate the projector. If it goes into emergency again, after the fans have stoppod, turn off the main power switch, pull out the power ocrd, and oonsult your authorized dealer or servioe center for repair.

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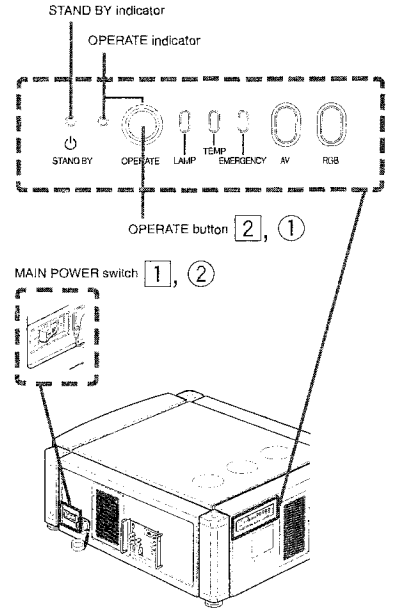
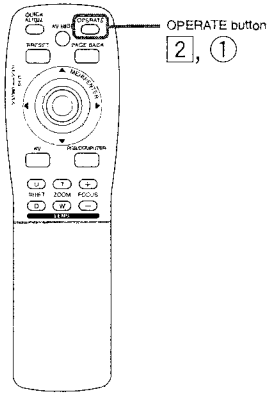
Basic Operations

■ **Projector's buttons**



■ **Remote control unit**

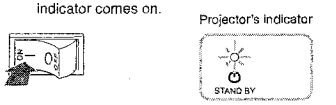


The following describes the basic procedure for normal use of the projector.

1. Turning on the Power

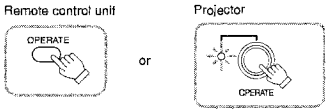
1 Turn on the MAIN POWER switch of the projector.

ON [I]: The main power turns on and the STAND BY indicator comes on.



2 Press the OPERATE button for one second or more. (Or press the remote control's OPERATE button for one second or more.)

- The OPERATE indicator comes on.
- About 30 seconds after the MAIN POWER switch is turned on, you can start projecting.



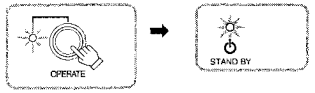
Note

- After the power is turned on, the screen may be jumbled for a few seconds, but this is not a malfunction.

■ Turning off the Power

① Press the OPERATE button for one second or more. (Or press the remote control's OPERATE button for one second or more.)

- The STAND BY indicator changes to blinking, and the projector goes into cool-down mode.



② Turn off the MAIN POWER switch after the cooling fans have stopped running.

OFF [O]: The MAIN POWER switch turns off and the STAND BY indicator goes off.

* Do not turn off the MAIN POWER switch during cool down mode (the STAND BY indicator blinking). About 10 minutes after the STAND BY indicator comes on steady (stand-by mode), the cooling fans (except the one for the light-source lamp power supply) will stop, and then turn off the MAIN POWER switch.

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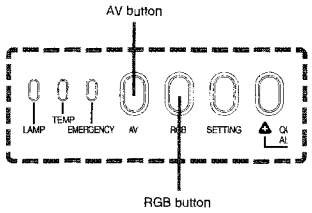
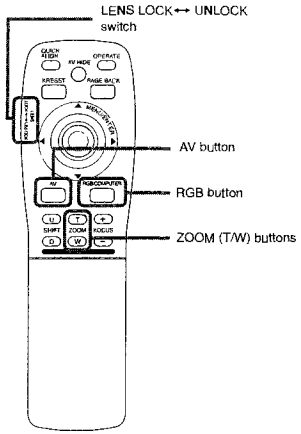
■ **Projector's buttons**



■ **Remote control unit**



ATTENTIONS

- **DO NOT give any shock to this projector while operating it;** otherwise, the light-source lamp goes off (the EMERGENCY indicator lights up).

  If the shock turns off the light-source lamp — **Turn off the power by pressing the MAIN POWER switch, then turn it on again. Then, when the STAND BY indicator comes on, you can now operate the projector as usual.**

2. Select the video input to be projected

■ **Press the AV button or the RGB button to switch the input.**

- Each time you press either button, the selected input changes as follows.

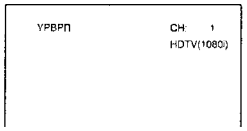
■ **When you press VIDEO:**

Y/C ⇄ VIDEO ⇄ YPBPR

■ **When you press COMPUTER:**

RGB 1 ⇄ RGB 2

Screen display



* When the input is switched, the line display and the source display are shown on the upper part of the screen (they disappear in about five seconds). However, they will not be shown if LINE DISPLAY in "Setting and Adjusting Other Functions (OPTIONS)" on page 41 is set to OFF.
(For setting the source, see page 44.)

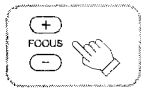
3. Adjust the screen size

■ **Adjust the screen size with the remote control's ZOOM (T/W) buttons.**
When adjusting the screen size with the ZOOM buttons, set the LENS LOCK↔UNLOCK switch to the UNLOCK position.

■ **To enlarge the screen size:**
Press the ZOOM (W) button.

■ **To reduce the screen size:**
Press the ZOOM (T) button.

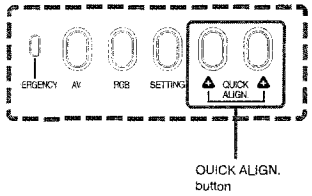
Remote control unit



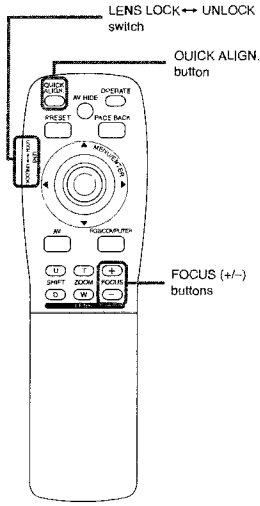
Notes

- The adjustment of the screen size (zoom adjustment) can also be made on the setting menu.
  For operating the setting menu, refer to "Making Basic Settings" on page 30.
- When a fixed-focus lens is used, you cannot operate the setting menu.

■ **Projector's buttons**



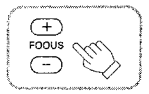
■ **Remote control unit**



4. Adjust focus

■ **Adjust focus with the remote control's FOCUS (+/–) buttons.**
When adjusting the focus with the FOCUS buttons, set the LENS LOCK↔UNLOCK switch to the UNLOCK position.

Remote control unit



Note

- Focus adjustment can also be made on the setting menu. For operating the setting menu, refer to "Making Basic Settings" on page 30.

For Operating Other Functions

■ **To use the quick alignment function**
The quick alignment function is used to automatically adjust (set) the screen settings of "TRACKING, PHASE, H. POS. and V. POS." of computer system input video.

- Use either the remote control's or projector's button.

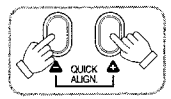
■ **When using the remote control unit:**
Press the QUICK ALIGN. button.

■ **When using the projector:**
Clear the menu display, and press the projector's QUICK ALIGN. "▲" and "▲" buttons at the same time.

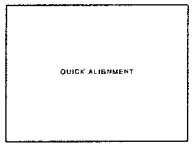
* During the automatic adjustment, "QUICK ALIGNMENT" appears on the screen and disappears automatically after the adjustment is completed.

Remote control unit

Projector



Screen display



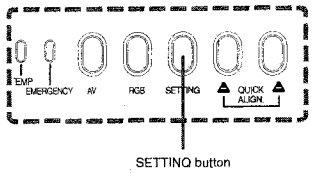
Note

- **This function works only for computer system inputs.**

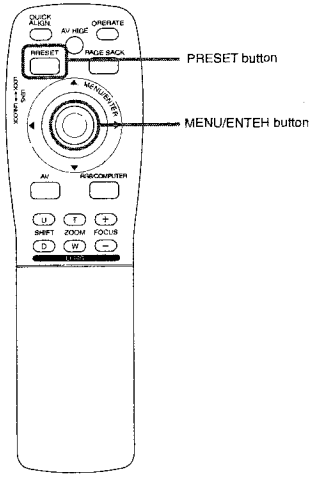
CAUTION

- **When performing automatic adjustment using the quick alignment function:**
  Use a bright, still-picture screen. It may not function correctly on a dark or motion-picture screen.
  If the condition adjusted by using the quick alignment function is not good, manually adjust TRACKING, PHASE, H. POS. and V. POS. (see pages 30, 36 and 37).

■ **Projector's button**



■ **Remote control unit**



■ **To display the SETTING menu**

The setting menu is used to make basic adjustments and settings (TRACKING, PHASE, H. POS., V. POS., FOCUS and ZOOM) of the videc picture being projected after installation (connection) or after inputs are switched. For operating the setting menu, refer to "Making Basic Settings" on page 30.

- **Press the projector's SETTING button.**
  The setting menu is displayed on the screen.

Remote control unit

■ **To display the MAIN menu**

The main menu is used to adjust or set tho projected videc picture and the projector's oondition, eto. (PIXEL CLOCK, POSITION, PICTURE, OPTIONS, SOURCE DECODER and LANGUAGE). For operating the main menu, refer to pages 33 to 58.

- **Press the remote control's MENU/ENTER button.**
  The main menu appears on the screen.

Remote control unit

Note

- **To change tho menu language displayed**
  English is set when the projector is shipped from the factory. The language displayod can be selected from the following six languages: 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some words such as "QUICK ALIQNMENT" are displayed only in English. Pronouns such as line display and source display are similarly treated.

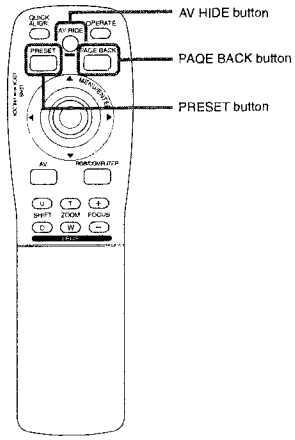
■ **To olear tho main monu**

Use the PAGE BACK button to clear the main menu.
For how to operate the PAGE BACK button, see pages 33 to 58.

- **While the main menu is displayed, press PAGE BACK on the remote oontrol.**
  The main menu will disappear.

Remote oontrol unit

■ **Remote oontrol unit**



■ **To display "CHANNEL" on the screen**

While nc menu is displayed, pressing the PAGE BACK button causes the channel now being used to appear.
You can also switch channels. For details, refer to "Switching Channels with a Direct Channei" on page 52.

- **While no menu is displayed, press PAGE BACK on the remote control.**
  The channel appears on the screen.

Remote control unit

■ **To temporarily erase video image**

Press the AV HIDE button, and video image will temporarily disappear from the screen. Prossing the button again will resumc the videc image.

- **Press AV HIDE on the remote control.**
  Videc image temporarily disappears from the screon.

Remote control unit

■ **To use the remote control's PRESET button**

The PRESET button is used for adjustments mado on the main menu or setting menu.

- **Whcn resetting only the selected settings to the factory-set values, press the remote control's PRESET button.**
  Only the selected item's setting is reset to the faotory-set value.

Remote control unit

Notes

- This button works only for numeric values. It does not work for switching between ON and OFF.
- Por items such as PIXEL CLOCK (TRACKING and PHASE), POSITION (H. POS. and V. POS.), both settings are reset at the same time.

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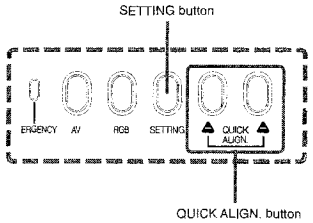
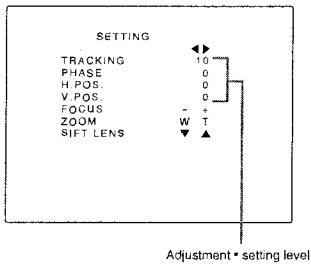
Operating the Setting Menu

Making Basic Settings

■ Projector's buttons



■ Setting menu



Deecription of adjuetment and eetting iteme

TRACKING : If wide vertical stripes appear on the screen, adjust the lateral videc size and display area so that they disappear. (–255 ↔ 0 ↔ +255)

PHASE : If characters on the screen flicker or beccme dim, adjust so they beccme clear. (–127 ↔ 0 ↔ +127)

H. POS. : If the screen position is displaced to the right or left, adjust the horizcntal position of the screen. (–255 ↔ 0 ↔ +255)

V. POS. : If the screen position is displaced upward or downward, adjust the vertical positicn of the screen. (–120 ↔ 0 ↔ +120)

FOCUS : Adjust the fccus of video picture.
–: Focuses on near pcints.
+: Focuses on farther points.

ZOOM : Adjust the screen size (angle of view).
T : Beccmes smaller.
W : Becomes larger.

SIFT LENS : Adjusts the projected screen pcsition.
▼: Moves it down.
▲: Moves it up.

In this section, we are making basic picture adjustments which should be performed after installation (connection).

Notes

- The setting menu is displayed when you press the SETTING button on the projector. After the menu is displayed, you can make settings (adjustments).
- If the projector's position or connections have been changed, adjustments and settings shculd be performed again.
- After adjustments, if further picture adjustment is necessary depending on the equipment connected, use the main menu (pages 33 to 58) to make detailed settings and adjustments.
- For computer-related inputs, use of the quick alignment function allcws automatic adjustment of TRACKING, PHASE, H. POS. and V. POS. (See pages 30, 36 and 37).

1 Press the SETTING button of the projector.

- The setting menu is displayed on the screen.

2 Press the SETTING button to select the desired item.

- The selected item is shown in magenta color. Each time you press the button, the selected item changes as follows:

TRACKING → PHASE → H. POS. → V. POS.
↓
Menu clearing ← SIFT LENS ← ZOOM ← FOCUS

Memo

To select items using the remote ocntrol unit:
Items can be selected using the cursor buttons ▲ (backward) or ▼(forward) on the remote control unit. In this case, menu clearing in the above order is not available. The selection changes from SIFT LENS to TRACKING directly.

3 Adjust and set the selected item using the QUICK ALIGN. buttons ▲ or ▲.

- To adjust and set multiple items, repeat steps 2 and 3.
- To reset the adjustment value of the selected item (TRACKING, PHASE, H. POS. or V. POS.) to the factcry-set value, press the remote control's PRESET button. This button does not work for focus and zoom.

Memo

Te adjust and set Items usIng the remote ocntrol unit:
Items can be adjusted or set by pressing the MENU/ENTER button toward the ◄ or ► mark on the remote control.

4 Clear the setting menu by pressing the SETTING button repeatedly.

Memo

To clear the setting menu using the remote ocntrol unit:
You can also clear the setting menu by prossing the PAGE BACK button on the remote ocntrol unit.

Operating the Main Menu

Configuration the Main Menu (AV Input) For computer inputs, see the following page.

You can adjust video quality (PICTURE) and etc. using the menus.
The menus are ccnfigured as follows:

Main menu (AV inputs : During EXT. IN input signal)

PIXEL CLOCK
- TRACKING : Normally, no adjustment is required. The lateral size and display area of video image are adjusted.
- PHASE : Normally, no adjustment is required. Flickering or dim video image is adjusted.

POSITION
- V. POS. : The vertical position of the video image being projected is adjusted.
- H. POS. : The horizontal position of the video image being projected is adjusted.

PICTURE
- BRIGHTNESS : The brightness of the video image being projected is adjusted.
- CONTRAST : The contrast of the video image being projected is adjusted.
- SHARPNESS : The sharpness of the video image being projected is adjusted.
- COLOR : The color density of the video image being projected is adjusted.
- TINT : The tint of the video image being projected is adjusted. (Displayed only for NTSC signal)
- ALL RESET : All the items adjusted are reset.

OPTIONS
- MENU AUTO OFF : Sets whether to turn off menu display automatically (YES) or not (NO).
- LINE DISPLAY : Sets whether to make the line display effective (ON) or not (OFF) for about 5 seconds after input switching.
- RIGHT LEFT REV. : Videc image is reversed right-to-left.
- TOP BOTTOM INV. : Video image is inverted top-to-bottom.
- CLAMP : Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp pulse is used at BP. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST.
- RESIZE : Does not work with AV (video) input. (RESIZE is shown in gray.)
- BACK COLOR : Specifies the background color when there is no video signal. Background color can be selected from BLUE, CYAN, BLACK, GREEN, MAGENTA, RED, and YELLOW.
- COLOR TEMP. : Adjusts the color temperature of the image being projected. Make adjustment when the image becomes reddish or bluish. Color temperature can be set to LOW, MIDDLE, or HIGH.
- ASPECT CHANGE : Selects the vertical-to-horizontal ratio of the image projected. The factory-set ratio is 4 : 3. When projecting high-vision video image, a ratio of 16 : 9 can be selected.
- SLEEP TIME : Sets the length of sleep time. A set sleep time after input signal is depleted, the projector goes into a stand-by state. Sleep time can be selected from 10 minutes, 20 minutes, 30 minutes, 60 minutes and 0 minutes. (If you select 0 minutes, the sleep time will be cleared.)
- LAMP TIME : Indicates the accumulated used hours of the light-source lamp.

SOURCE : Normally used in AUTO. If use in AUTO is unstable such as color not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal. USER allows you to set a source which is uniquely adjusted by the user.

CHANNEL : Sets a line and multiple sources for each channel.

USER SOURCE SET UP : Sets up an area for the source being input, and registers the user name.

DISPLAY SIZE : Adjusts H PIXEL, V PIXEL, H CENTER and V CENTER of video image.

DECODER : Normally, set to AUTO. The color system of an input signal is automatically identified and shown in { }. When use in AUTO is unstable such as no color being shown, set the dedicated color system in accordance with the input signal. You can select from AUTO, NTSC(480i), NTSC4.43, PAL, and SECAM.

LANGUAGE : Text on the screen can be changed to a language other than English. Languages that can be displayed are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some text such as "QUICK ALIGNMENT", etc. are shown only in English.

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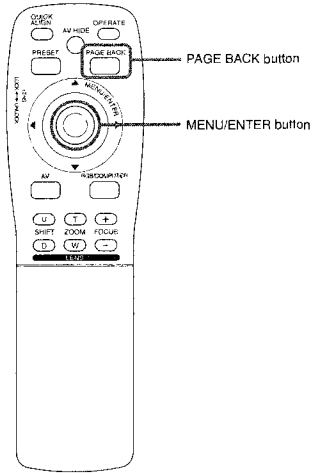
Configuration of the Main Menu (Computer-related input)

Main menu (Computer-related inputs : During COMPUTER IN-1 or -2 input signal)

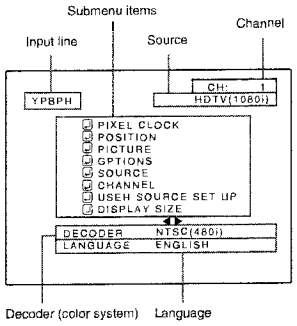
- PIXEL CLOCK
  - TRACKING : The lateral size and display area of video image are adjusted.
  - PHASE : Flickering or dim video image is adjusted.
- FOSITION
  - V. POS. : The vertical position of the video image being projected is adjusted.
  - H. POS. : The horizontal position of the video image being projected is adjusted.
- PICTURE
  - BRIGHTNESS : The brightness of the video image being projected is adjusted.
  - CONTRAST : The contrast of the video image being projected is adjusted.
  - R-GAIN : The gain in red signal of the video image being projected is adjusted.
  - G-GAIN : The gain in green signal of the video image being projected is adjusted.
  - B-GAIN : The gain in blue signal of the video image being projected is adjusted.
  - TEXT MODE : Adjust easiness for reading text during RESIZE.
    NORMAL: Normal
    TEXT 1: Display the outline of small letters already.
    TEXT 2: Makes the outline of large letters sharp.
  - ALL RESET : All the items adjusted are reset.
- OPTIONS
  - MENU AUTO OFF : Sets whether to turn off menu display automatically (YES) or not (NO).
  - LINE DISPLAY : Sets whether to make the line display effective (ON) or not (OFF) for about 5 seconds after input switching.
  - RIGHT LEFT REV. : Image is reversed right-to-left.
  - TOP BOTTOM INV. : Image is inverted top-to-bottom.
  - CLAMP : Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp pulse is used at BP. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST.
  - RESIZE : When the number of pixels (resolution) sought by the video image input is smaller than that (resolution) of D-ILA device, the video image is then enlarged to a virtually full screen size of D-ILA device and projected. (Resizing indication)
  - BACK COLOR : Specifies the background color when there is no image signal. Background color can be selected from BLUE, CYAN, BLACK, GREEN, MAGENTA, RED, and YELLOW.
  - COLOR TEMP. : Adjusts the color temperature of the video image being projected. Make adjustment when the video image becomes reddish or bluish.
    Color temperature can be set to LOW, MIDDLE, or HIGH.
  - ASPECT CHANGE : Selects the vertical-to-horizontal ratio of the video image projected. The factory-set ratio is 4 : 3. When projecting high-vision image, a ratio of 16 : 9 can be selected.
  - SLEEP TIME : Sets the length of sleep time. A set sleep time after input signal is depleted, the projector goes into a stand-by state. Sleep time can be selected from 10 minutes, 20 minutes, 30 minutes, 60 minutes and 0 minute. (If you select 0 minutes, the sleep time will be cleared.)
  - LAMP TIME : Indicates accumulated used hours of the light-source lamp.
- SOURCE : Normally used in AUTO. If use in AUTO is unstable such as color not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal.
  USER allows you to set a source which is uniquely adjusted by the user.
- CHANNEL : Sets a line and multiple sources for each channel.
- USER SOURCE SET UP : Sets up an area for the source being input, and registers the user name.
- DISPLAY SIZE : Adjusts H PIXEL, V PIXEL, H CENTER and V CENTER of video image.
- DECODER : Does not work with computer-related inputs. (The color system is indicated in gray.)
- LANGUAGE : Text on the screen can be changed to a language other than English. Languages that can be displayed are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESFAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some text such as "QUICK ALIGNMENT", etc. are shown only in English.

Operating the Main Menu (Basic Operation of the Main Menu)

■ Remote control unit



■ Main menu



For projector's menus, the setting menu and the main menu are available.
Here, we explain about the operation of the main menu.
For the setting menu, refer to "Making Basic Settings" on page 30.

1 Press the MENU/ENTER button.

- The main menu is displayed on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select an item.

- The selected item (displayed text) is shown in magenta color on the screen.

3 Set (adjust) the item.

■ **When you have selected DECODER or LANGUAGE,**

- Press MENU/ENTER toward the ◄ or ► mark to set.
- To finish the main menu, press the PAGE BACK button.

■ **When you have selected an item on the submenu,**

- Press MENU/ENTER te display the submenu. Then, set (adjust) the item by pressing MENU/ENTER toward the ◄/► or ▲/▼ mark.
- To return to the main menu, press PAGE BACK again. To finish the main menu, press PACE BACK again. (To finish the main menu from the submenu, press PAGE BACK twice.)

■ **About main menu display:**

Line display: The selected input-mode designation is displayed. For input-mode designation, "Y/C", "VIDEO", "Y, PB/B-Y, PR/R-Y", "COMPUTER 1" and "COMPUTER 2" are available.

Source display: The type of signal being input is displayed. With this projector, unique designations are previously given to specific horizontal and vertical frequencies. This allows the source selected under SOURCE (submenu item) to be indicated. The source setting can be selected from AUTO mode, dedicated (forced) modes and USER mode. When AUTO is selected, the horizontal and vertical frequencies of a signal being input are detected and the matched designation is displayed in ( ).
Display example: "AUTO (NTSC(480i))"
Therefore, be careful as the source display does not always correspond to the indication or type of the input signal.
For the unique designations for the specific horizontal and vertical frequencies, see page 19.

Channel display: The channel selected by the user is displayed. The line, sources and switcher No. selected by the user have been registered to the channel. Once registered, the line, sources and switcher No. of the projector will change to the ones the user has registered only by switching between channels. The settings should be made on the "Channel setup/selection menu". For details, see page 47.

Submenu item display: See pages 36 to 58.
Decoder (Color system) display: See page 34.
Language display: See page 35.

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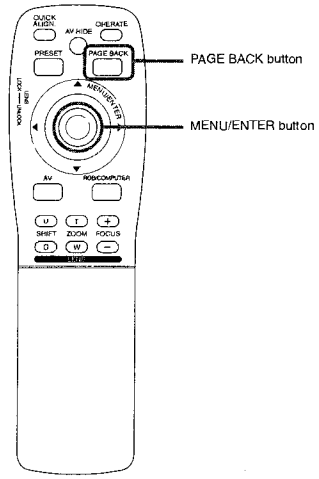
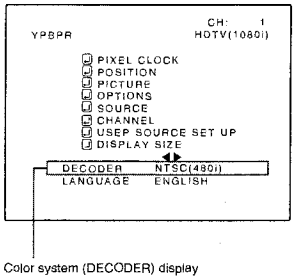
DLA-M4000LU
DLA-M4000LE

Changing the Color System

■ Remote control unit



■ Main menu



Color system (DECODER) display

Note

- When computer-related signal is input, the display of the color system is changed to gray color, making operation impossible. When video signals from AV devices are input, the item for the color system can be set.

AUTO is set for the color system when the projector is shipped from the factory. Normally, use it in AUTO. If operation in AUTO is unstable such as with color not being shown, set to a dedicated color system in accordance with the color system of the signal being input.

1 Press the MENU/ENTER button.

- The main menu is shown on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select "DECODER".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press MENU/ENTER toward the ◄ or ► mark to set.

- Each time you press MENU/ENTER toward the ◄ or ► mark, the color system changes as follows:
  ► : Forward / ◄ : Backward

AUTO ..... Normally, set to AUTO. The color system of a signal being input is automatically identified.
NTSC(430i) ..... Dedicated to NTSC(480i).
NTSC4.43 ..... Dedicated to NTSC4.43.
PAL ..... Dedicated to PAL.
SECAM ..... Dedicated to SECAM.

Memo

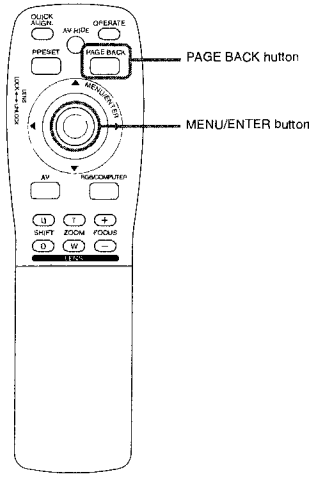
About automatic signal identification

- AUTO is selected when shipped from the factory. In AUTO, the color system (DECODER) of the signal being input is automatically identified and indicated in ( ). Refer to the main menu display.
- If operation in AUTO is unstable such as with color not being shown, set to a dedicated color system in accordance with the color system of the signal being input. When the dedicated color system is set, be careful as automatic identification does not work.

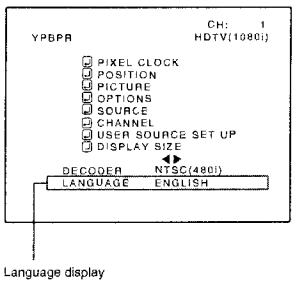
■ To finish the main menu, press the PAGE BACK button.

Changing the Language Display

■ Remote control unit



■ Main menu



Language display

Note

- The selected item is shown in magenta color. Items shown in gray cannot be operated or set in the current mode.

The language in the menu display is set to English when shipped from the factory. When you want to change to another language, set it as follows.

1 Press the MENU/ENTER button.

- The main menu is shown on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select "LANGUAGE".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press MENU/ENTER toward the ◄ or ► mark to set.

- Each time you press MENU/ENTER toward the ◄ or ► mark, the selected language changes as follows:
  ► : Forward / ◄ : Backward

日本語 ..... Japanese
ENGLISH ..... English
DEUTSCH ..... German
ESPAÑOL ..... Spanish
ITALIANO ..... Italian
FRANÇAIS ..... French

Memo

About language display

English is selected when the projector is shipped from the factory. The languages in the menu display are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), and FRANÇAIS (French).
However, some text such as "QUICKALIGNMENT" is displayed only in English. Unique designations such as line display and source display are similarly indicated.

■ To finish the main menu, press the PAGE BACK button.

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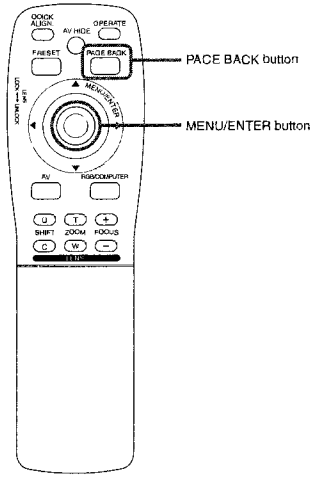
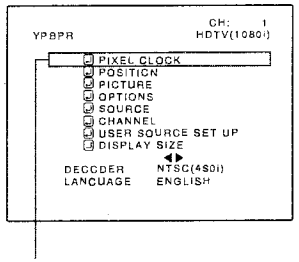
Adjusting the Pixel Clock

■ Remote control unit



■ Main menu



Submenu item (PIXEL CLOCK)

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be eparated or set in the current mode.
- A dim screen could bc caused by insufficient adjustment of brightness and contrast. Before adjusting phase, make sure that brightness and contrast ara correctly adjusted.

The pixel clock should be adjusted mainly for computer-related inputs. (Normally, it does not need to be adjusted for video inputs.) If a wide stripe appears on the screen, adjust the lateral size of video image and the display area (tracking adjustment) so the stripe disappears. Also, if text on the videc scroen appears flickering or dim, make adjustment so it becomes clear (phase adjustment).

1 Press the MENU/ENTER button.

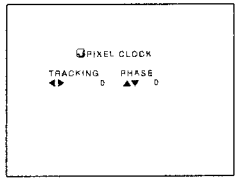
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "PIXEL CLOCK".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

- The submenu items of the PIXEL CLOCK menu appears on the screen.



(PIXEL CLOCK menu)

4 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to adjust "TRACKING" and "PHASE".

- Adjust the tracking and phase of tho video screen being projeoted. Tc adjust the phase, first check for correct tracking adjustment.

Adjustment item	Button	Adjustment content
TRACKING	◄	The screen shrinks laterally (right-to-left). (–255 ← 0 ← +255)
	►	The screen extends laterally (right-to-left). (–255 → 0 → +255)
PHASE		Sct tc a position where text appears clear.
	▲	(–127 → 0 → +127)
	▼	(–127 ← 0 ← +127)

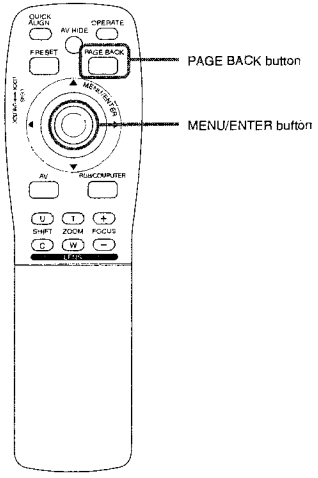
* To reset to the factcry-set adjustment values, press the remote control's PRESET button.
Tracking and phase are reset tc the factory-set adjustment values.

■ To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

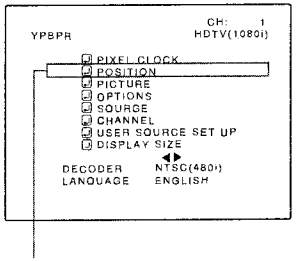
- To finish the menu display from the submenu display (PIXEL CLOCK menu), press PAGE BACK twice.

Adjusting the Screen Position

■ Remote control unit



■Main menu



Submenu item (POSITION)

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Adjust the position cf the screen if it is displaced.

1 Press the MENU/ENTER button.

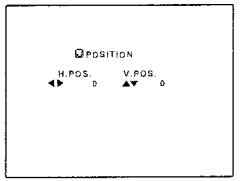
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "POSITION".

- The solected item (displayed in text) is shown in magenta color cn the screen.

3 Press the MENU/ENTER button.

- The submenu items of the POSITION menu appear on the screen.



(POSITION menu)

4 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to adjust "H. PGS." and "V. PGS.".

- Adjust the horizcntal and vertical positicns of the videc picture screen being projected.

Adjustment item	Button	Adjustment content
H. POS.	◄	The screen moves to the left. (–255 ← 0 ← +255)
	►	The screen moves to the right. (–255 → 0 → +255)
V. PCS.	▲	The screen moves upwards. (–120 → 0 → +120)
	▼	The screen moves downwards. (–120 ← 0 ← +120)

* To reset to the factory-set adjustment values, press the remote oontrol's PRESET button. H. POS. and V. POS. are reset tc the factory-set adjustment values.

■ To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

- To finish the menu display frcm the submenu display (POSITION menu), press PAGE BACK twice.

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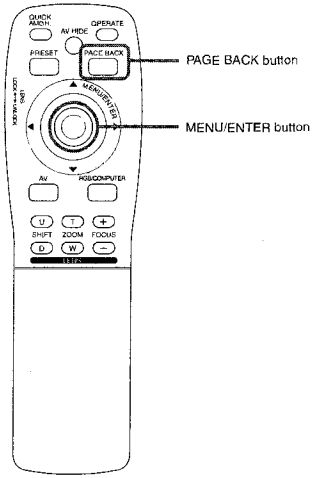
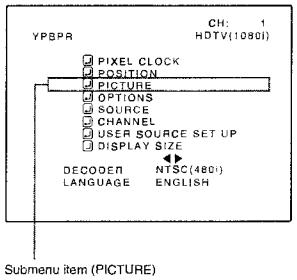
DLA-M4000LU
DLA-M4000LE

Adjusting Picture Quality

■ Remote control unit



■ Main menu



Submenu item (PICTURE)

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

Adjust brightness, contrast, etc. so you have the desired screen. Adjustment items (on the PICTURE menu) are different when video-related signals are input and when computer-related signals are input.

1 Press the MENU/ENTER button.

- The main menu appears on the screen.

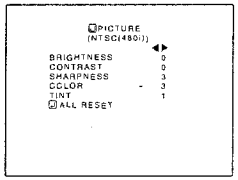
2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "PICTURE".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

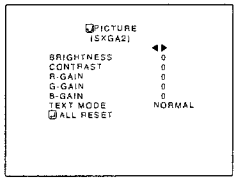
- The submenu items of the PICTURE menu appear on the soreen.

■ When AV signals are input



(Video-image PICTURE menu)

■ When computer-related signals are input



(Computer-image PICTURE menu)

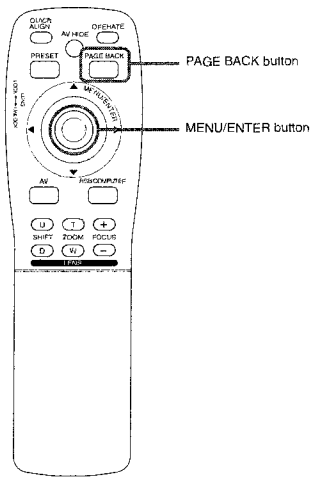
4 Press MENU/ENTER toward the ▲ or ▼ mark to select the item to adjust.

- The selected item (displayed in text) is shown in magenta oolor.

(To be continued on the next page)

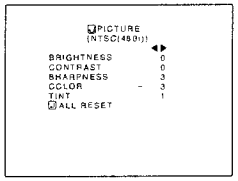
Adjusting Picture Quality (Cont.)

■Remote control unit



■Submenu items

[PICTURE menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

5 Press MENU/ENTER toward the ◄ or ► mark to adjust the selected item.

■ For video system input

- To adjust multiple items, repeat steps 4 and 5.
- To reset all items (to factory-set adjustment values, "0"), press MENU/ENTER toward the ▲ or ▼ mark to select "ALL RESET", and press MENU/ENTER.
- To reset only the selected items (ALL RESET excluded) to the factory-set adjustment value, press the remote control's PRESET button. The selected item is reset to the factory-set adjustment value.

Adjustment Item	Button	Adjustment content
BRIGHTNESS	◄	Gets darker. (–30 ← 0 ← +30)
	►	Gets brighter. (–30 → 0 → +30)
CONTRAST	◄	Gets lower. (–30 ← 0 ← +30)
	►	Gets higher. (–30 → 0 → +30)
SHARPNESS	◄	Gets softer. (0 ← 7)
	►	Gets sharper. (0 → 7)
COLOR	◄	Gets softer. (–30 ← 0 ← +30)
	►	Gets deeper. (–30 → 0 → +30)
TINT	◄	Gets reddish. (–30 ← 0 ← +30)
	►	Gets greenish. (–30 → 0 → +30)
ALL RESET	MENU/ ENTER	Resets all adjustment values of items on the PICTURE menu to the factory-set values (0).

Notes

- The adjustment item, TINT, is displayed only for NTSC system. It is not displayed (cannot be adjusted) when PAL or SECAM system signals are input.
- When video signals are input to the COMPUTER IN-2 terminal, adjustment items "COLOR" and "TINT" are indicated but cannot be adjusted.

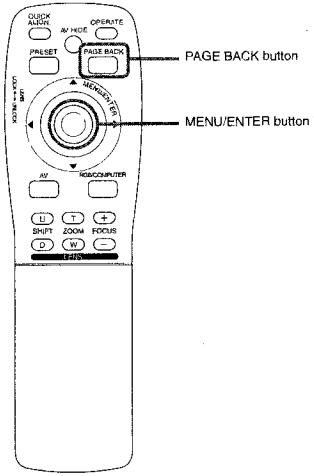
■ For computer system input

- To adjust multiple items, repeat steps 4 and 5.
- To reset all items (to factory-set adjustment values, "0"), press MENU/ENTER toward the ▲ or ▼ mark to select "ALL RESET", and press MENU/ENTER.
- To reset only the selected items (ALL RESET excluded) to the factory-set adjustment value, press the remote control's PRESET button. The selected item is reset to the factory-set adjustment value.

(To be continued on the next page)

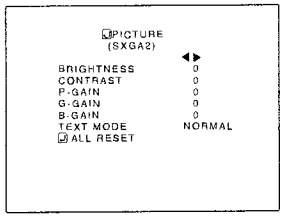
Adjusting Picture Quality (Cont.)

■Remote control unit



■Submenu items

[PICTURE menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

Adjustment item	Button	Adjustment content
BRIGHTNESS	◄	Gets darker. (–30 ← 0 ← +30)
	►	Gets brighter. (–30 → 0 → +30)
CONTRAST	◄	Gets lower. (–30 ← 0 ← +30)
	►	Gets higher. (–30 → 0 → +30)
R-GAIN	◄	Gets less reddish. (–30 ← 0 ← +30)
	►	Gets more reddish. (–30 → 0 → +30)
G-GAIN	◄	Gets less greenish. (–30 ← 0 ← +30)
	►	Gets more greenish. (–30 → 0 → +30)
B-GAIN	◄	Gets less bluish. (–30 ← 0 ← +30)
	►	Gets more bluish. (–30 → 0 → +30)
TEXT MODE		Sets a mode which allows easy text reading.
	◄	NORMAL ⇔ TEXTE1 ⇔ TEXTE2 ⇔
	►	NORMAL ⇔ TEXTE1 ⇔ TEXTE2 ⇔
ALL RESET	MENU/ ENTER	Resets all adjustment values of items on the PICTURE quality menu to the factory-set status (adjustment values: 0, text mode: NORMAL).

Note

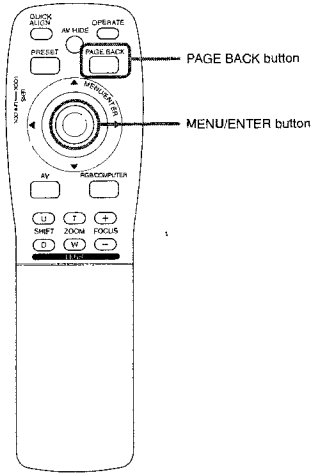
- There is a relationship between the adjustment of items R-GAIN, G-GAIN, and B-GAIN and that of item CONTRAST. For example, when adjustment values are : R-GAIN: 0, G-GAIN: 5, B-GAIN: 0, and CONTRAST: 0, changing CONTRAST to 1 changes the adjustment values as follows: R-GAIN: 1, G-GAIN: 5, and B-GAIN: 1.
  Also, when the adjustment value of any of R-GAIN, G-GAIN, and B-GAIN has reached -30 (minimum) or +30 (maximum), CONTRAST cannot be adjusted to any higher value. For example, when R-GAIN is 0, G-GAIN is 5, B-GAIN is 0, and CONTRAST is 0, increasing CONTRAST allows the other adjustment values to increase until R-GAIN: 25, G-GAIN: 30, and B-GAIN: 25, then CONTRAST becomes 25 and cannot be adjusted to any higher value.

● To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

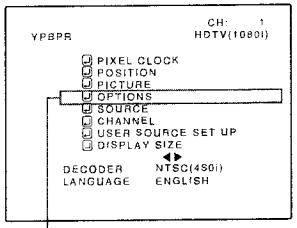
- To finish the menu display from the submenu display (PICTURE menu), press PAGE BACK twice.

Setting and Adjusting Other Functions (OPTIONS)

■ Remote control unit



■ Main menu



Submenu item (OPTIONS)

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer system signals are input.

The following optional functions can be set (adjusted).

- MENU AUTO OFF
- LINE DISPLAY
- RIGHT LEFT REV.
- TOP BOTTOM INV.
- CLAMP
- RESIZE
- BACK COLOR
- COLOR TEMPERATURE
- ASPECT CHANGE
- SLEEP TIME
- LAMP TIME

Memo

About the lamp use time

The lamp use time indicates the accumulated used hours of the light-source lamp and cannot be set or adjusted. When you have replaced with a new light-source lamp, reset the lamp use time.

Note

- The RESIZE function works for only computer system input. It does not work for video system input.

1 Press the MENU/ENTER button.

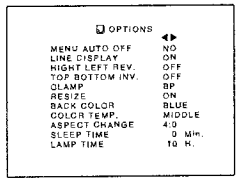
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "OPTION".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

- The submenu items of the OPTIONS menu are displayed.



(OPTIONS menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select an item to set (adjust).

- The selected item (displayed in text) is shown in magenta color.

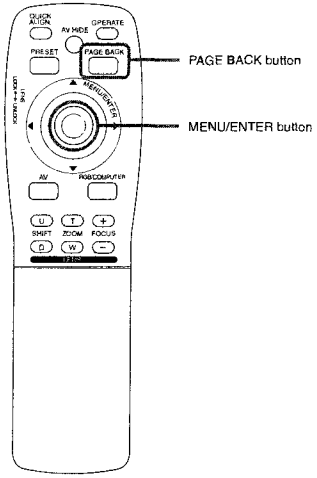
(To be continued on the next page)

No.51666

DLA-M4000LU
DLA-M4000LE

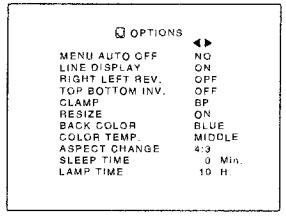
Setting and Adjusting Other Functions (OPTIONS) (Cont.)

■Remote control unit



■ Submenu items

[OPTIONS menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer-system signals are input.
- When you turn the RESIZE function ON, allowing the screen to be enlarged virtually to its full size for projection (resizing display), the video image (resolution) becomes coarse.

5 Press MENU/ENTER toward the ◄ or ► mark to seleet an item to set (adjust).

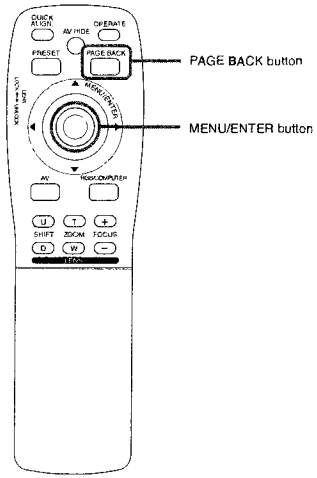
- To adjust multiple items, repeat steps 4 and 5.

Adjustment Item	Button	Adjustment content
MENU AUTO OFF	◄/►	Sets whether to clear the menu display automatically a fixed time later or not. (Factory setting : NO) **YES**: Clears the display automatically in about 25 seconds. **NO** : Does not clear the display automatically. **NO** ◄——► **YES**
LINE OISPLAY	◄/►	Sets whether to show the line display (Y/C, VIDEO, atc.) at the top of the projected screen or not. (Factory setting : ON) **OFF**: Does not show the line display. **ON** : Shows the line display. (The line display disappears about 5 seconds after it is shown.) **OFF** ◄——► **ON**
RIGHT LEFT REV.	◄/►	Reverses video image right-to-left. (Factory setting : OFF) **OFF**: For the front method **ON** : For upsido hanging from the ceiling **OFF** ◄——► **ON**
TOP BOTTOM INV.	◄/►	Inversus vidao image upside-down. (Factory setting : OFF) **OFF**: For normal set-up **ON** : For upside hanging from the ceiling **OFF** ◄——► **ON**
OLAMP	◄/►	Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp is used at BF. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST. (factory setting: BP) **BP** : The clamp pulse is positioned at the back porch. **ST** : The clamp pulse is positioned on the sink tip. **BP** ◄——► **ST**
RESIZE	◄/►	When the number of pixels (resolutien) sought by the input video is smaller then that (resolution) of D-ILA device, the video image is then enlarged to virtually full screen size of D-ILA devica and projected (resizing display). (Factory setting : **ON**) Does not work (cannot be set) for video system input. **OFF** : Does not enlerge the video image for projection. When the number of pixels sought hy video image is smaller than that of D-ILA device, projection takes place on a small screen size with a black area around the screen. **ON** : Enlarges virtually to the full screen size of D-ILA device for projection (resizing display). **OFF** ◄——► **ON**

(To be continued on the next page)

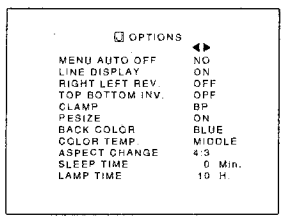
Setting and Adjusting Other Functions (OPTIONS) (Cont.)

■Remote control unit



■ Submenu items

[OPTIONS menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer-system signals are input.

Adjustment Item	Button	Adjustment content
BACK COLOR	◄/►	Sets background color when there is no input signal. (Factory setting : BLUE) **BLUE** ⟷ **CYAN** ⟷ **BLACK** ⟷ **GREEN** ↕ ↕ **YELLOW** ⟷ **RED** ⟷ **MAGENTA**
COLOR TEMP.	◄/►	Sets the color temperature of the video image being projected. Make adjustment when the image becomes reddish or bluish. (Factory setting : MIDDLE) **LOW** : Color temperature decreases (video image becoming reddish). **MIDDLE** : Results in middle color temperature. **HIGH** : Color tamperature increases (video image becoming bluish). **LOW** ⟷ **MIDDLE** ⟷ **HIGH**
ASPECT CHANGE	◄/►	Sets the vertical-to-horizontal ratio (**4 : 3** or **16 : 9**) of the video image projected. (Factory setting : **4 : 3**) **4 : 3** : The aspect ratio of the screen becomes **4 : 3**. Set it to **4 : 3** for video of NTSC, NTSC4.43, PAL, SECAM. **16 : 9**: The aspect ratio of the screen becomes **16 : 9**. Set it to **16 : 9** for Hi-Vision devices (W-VHS VCR, etc.) **4 : 3** ⟷ **16 : 9**
SLEEP TIME	◄/►	Sets the length of sleep time which automatically brings the projector into stand-by state. You can select one of the following sleep times : 10 minutes, 20 minute, 30 minutes, 60 minutes and 0. (Factory setting : 0 minutes) **10** ⟷ **20** ⟷ **30** ⟷ **60** ⟷ **0** ↑ ↑ If set to "0" minutes, this function does not work.

● To return to the main menu, press the PAGE BACK button. To finish tho main msnu, press PAGE BACK again.

- To finish the menu display from the submenu display (OPTIONS menu), press PAGE BACK twice.

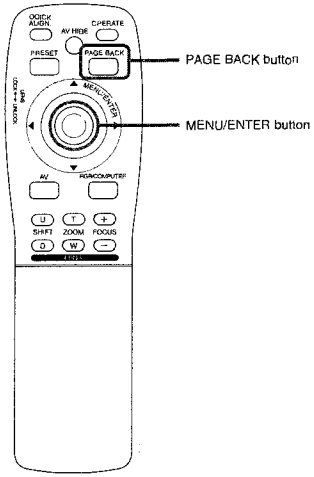
Note

- When you view a conventional (normal) 4 : 3 video picture, which is not wide video picture, on the projector's screen the aspect change function, the upper and lower parts of the videc picture become partially invisible. View such an original video picture in 4 : 3 mode, respecting the producer's intention.

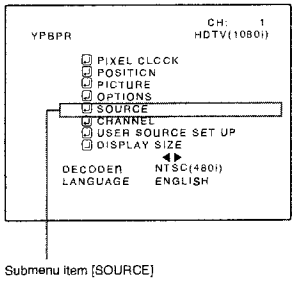
No.51666

Changing (Setting) the Source

■ Remote control unit



■Main menu



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

Normally, use the source setting in AUTO. If use in AUTO is unstable such as color not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal.
Also, USER mode, which is a user-dedicated source, is available.

- When shipped from the factory, the source settings are as follows:

Input mode	Factory setting	Input mode	Factory setting
VIDEO	NTSC(480i)	RGB 1	AUTO
Y/C	NTSC(480i)	RGB 2	AUTO
Y, Pb/B-Y, Pr/R-Y	AUTO	—	—

Notes

- Depending on the signal from a device connected, adjustment may be needed after a dedicated source is set. If that is the case, adjust the appropriate items.
- When the input mode (SOURCE) is VIDEO or Y/C, and if AUTO is set, the automatic detecting function may work, possibly causing the screen to be intermitted or disturbed. In thet case, set to a dedicated source (forced mode).
- When special effect playback (fast-forward/twice-speed/triple-speed) is performed on a video deck, etc., the picture may be disturbed or intermitted, depending on the device.
- When inputting 480p or 720p-DTV-format signal in COMPUTER2 input mode, use the dedicated source mode "SDTV(480p)" or "HDTV1(720p)". (At AUTO, 480p or 720p signal can not be detected.)

1 Press the MENU/ENTER button.

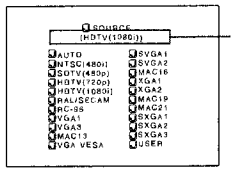
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select "SOURCE".

- The selected item (displayed in text) is shown in magenta color.

3 Press the MENU/ENTER button.

- The submenu items, SOURCE menu, appears on the screen.



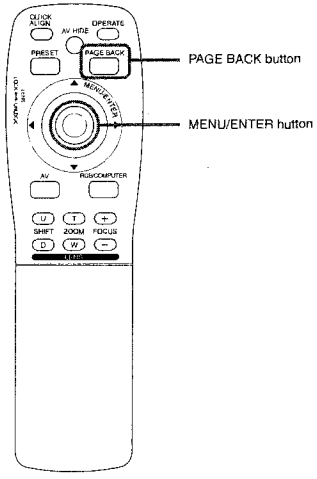
(SOURCE menu)

4 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to select a source from the "SOURCE" items.

- The selected item (text display) is shown in magenta color.

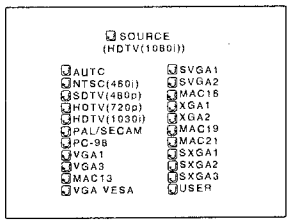
Changing (Setting) the Source (Cont.)

■ Remote control unit



■Suhmenu

[SOURCE setup menu]



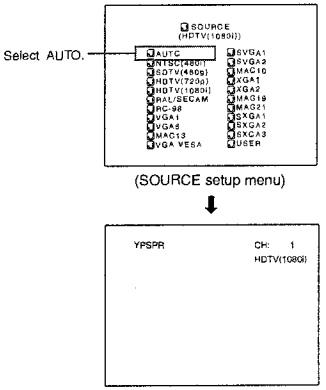
Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

5 Press MENU/ENTER to set (fix).

■ When a source setting "AUTO" is selected:

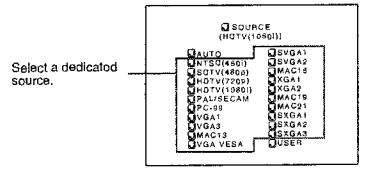
Under "SOURCE" shown at the top of the screen, AUTO is displayed in ( ), and the menu will automatically be cleared, finishing the setting procedure. Then, information on the input source will be shown for about 5 seconds.



■ When a source setting "DEDICATED SOURCE" is selected:

Under "SOURCE" shown at the top of the screen, a dedicated source name is displayed in ( ), and the setting procedure is finished.

- To finish the menu display, press PAGE BACK twice. (The display goes back to the main menu with the first press, and the main menu is cleared with the second press.)



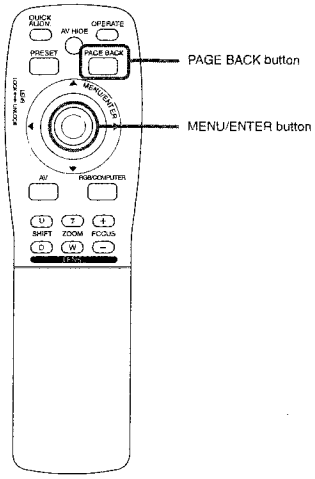
(To be continued on the next page)

No.51666

DLA-M4000LU
DLA-M4000LE

Changing (Setting) the Source (Cont.)

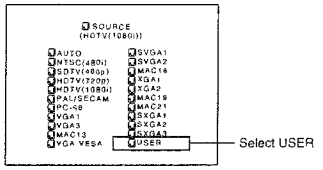
■ Remote control unit



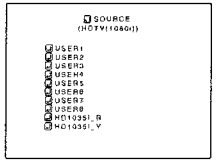
■ When a source setting "USER" is selected:

The "USER SOURCE setup menu" is displayed.

- On the "USER SOURCE setup menu (user)", a source created by the user can be selected.
- To select a user area, it must already be user-registered with the "USER SOURCE setup menu".



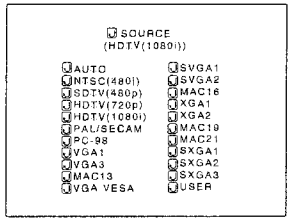
(SOURCE setup menu)



(SOURCE setup menu (user))

■Suhmenu

[SOURCE setup menu]



1. **Press MENU/ENTER toward the ▲ or ▼ mark to select a user area.**
   - The selected item (text display) is shown in magenta color.
2. **Press MENU/ENTER down to set a source.**
   - By having a source set, the source for the projector switches to the setting registered to the user source.

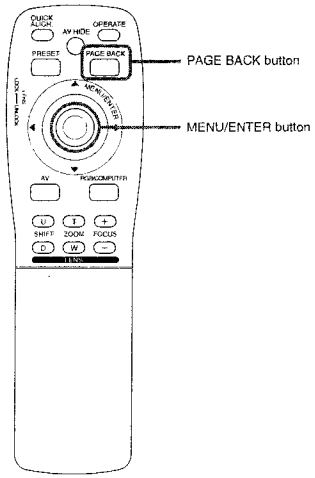
■ **Pressing PAGE BACK twice will bring you back to the main menu. To finish the main menu, press PAGE BACK again.**

Notes

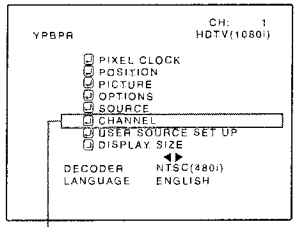
- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

Setting Up Channels

■ Remote control unit



■Main menu



Submenu item [CHANNEL]

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

When you set up channels, you can select a line and a multiple of sources (up to 30) for each channel. If you are using a switcher and set switcher numbers, you can also select each channel from the switcher side.

Memo

- With multiple sources having been set on channels, when a channel is selected, incoming signal is automatically checked and switched to one of the sources registered on the channel.
  If a matching source is not found among the registered sources, all other available sources are searched to find a matching source.

1 Press the MENU/ENTER button.

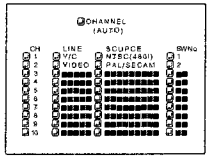
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "CHANNEL".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "CHANNEL setup/selection menu", appears on the screen.
- If no "LINE", "SOURCE" or "SWNo" item is registered, unregistered characters (■) are displayed on the screen.



(CHANNEL setup menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select the channel (CH) whose contents you want to change.

- The selected CH is shown in magenta color.

5 Press MENU/ENTER toward the ◄ or ► mark to select the item to set (LINE, SOURCE or SWNo).

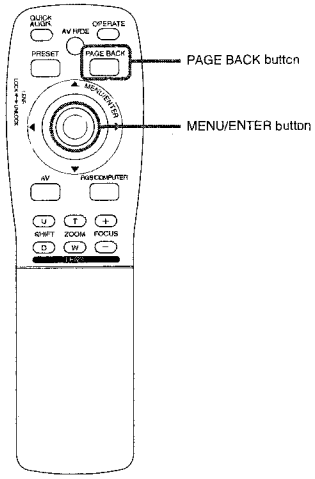
- The selected item is shown in magenta color.
- Unregistered channel items (LINE, SOURCE or SWNo) can also be selected. However, "LINE" and "SOURCE" need to be already set.

6 Press MENU/ENTER to set.

- Channel items LINE, SOURCE and SWNo) for the "CH" selected on the "CHANNEL setup • selection" menu are set.
- For how to set each item, see pages 48 to 51.

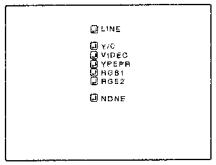
Setting Up Channels (LINE setup)

■ Remote control unit



■ When LINE is selected:

The "LINE selection menu" screen appears.



(LINE selection menu)

1 Press MENU/ENTER toward the ▲ or ▼ mark to select a line from the "LINE" items.

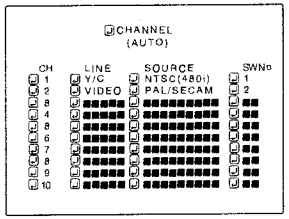
- The selected item (text display) is shown in magenta color.

2 Press the MENU/ENTER button to set.

- When you press MENU/ENTER, the "LINE" item shown in magenta color is selected, and the display goes back to the "Channel setup • selection" menu.
- If the "NONE" of "LINE" items is selected and MENU/ENTER is pressed, all the settings, "LINE", "SOURCE" and "SWNo", of the CH already selected will be cleared (erased).
  (If the selected channel is the same with the one in ( ) under the "CHANNEL" display at the top of the CHANNEL setup • selection menu, the registration or settings cannot be cleared.)

■ Pressing PAOE BACK twice will hring you back to the main menu. To finish the main menu, press PAOE BACK again.

■CHANNEL setup • selection menu

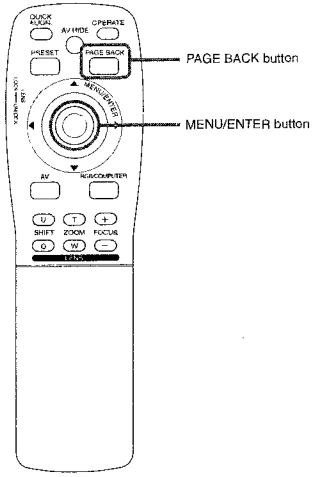


Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Setting Up Channels (SOURCE setup)

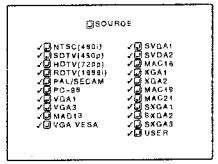
■ Remote control unit



■ When "SOURCE" is selected :

The "SOURCE registration" screen appears.

- To be able to display a menu, a "LINE" needs to be already registered.
- Sources already selected are indicated with check marks.



(SOURCE registration menu)

1 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to select a source from the "SOURCE" items.

- The selected item (text display) is shown in magenta color.

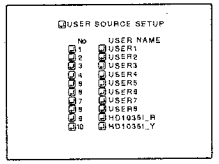
2 Press the MENU/ENTER button to set.

- When the item is set, a check mark is placed next to its source name, which is registered as a "SOURCE".
- If you place the cursor on a "SOURCE" item with a check mark attached and press MENU/ENTER, the check mark will disappear and the item will become unregistered as a "SOURCE" item. (If the selected channel is the same with the one in ( ) under the "CHANNEL" display at the top of the CHANNEL setup/selection menu, the registration or settings cannot be cleared.)

■ When "USER" is selected from "SOURCE registration menu":

The "USER SOURCE registration menu" appears.

- Registered usar sources are indicated with check marks.

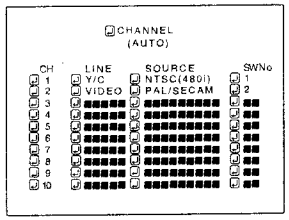


(USER SOURCE registration menu)

1. Press MENU/ENTER toward the ▲ or ▼ mark to select a scurce from the SOURCE items.

- The selected item (text display) is shown in magenta color.

■CHANNEL setup • selection menu



Note

- The selected item is shown in magenta colcr. Items shown in gray colcr cannot be operatod or set in tha current moda.

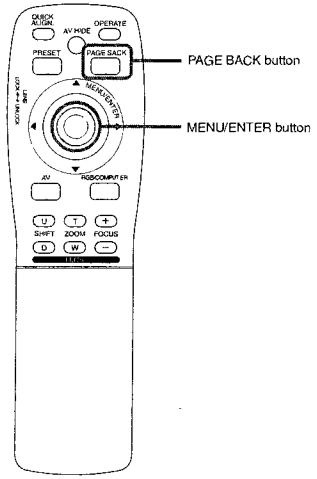
(To be oontinued on the next page)

No.51666

DLA-M4000LU
DLA-M4000LE

Setting Up Channels (SOURCE setup) (Cont.)

■ Remote control unit

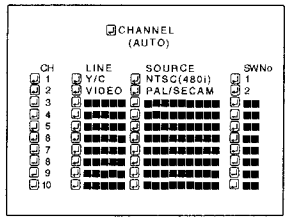


2. Press the MENU/ENTER button.

- When the item is set, a check mark is placed next to its user name, which is registered as a "SOURCE".
- If you place the cursor on a "SOURCE" item with a check mark attached and press MENU/ENTER down straight, the check mark will disappear, making the item unregistered as a "SOURCE" item.

■ Pressing PAGE BACK twice will bring you back to the main menu. To finish the main menu, press PAGE BACK again.

■ CHANNEL setup • selection menu

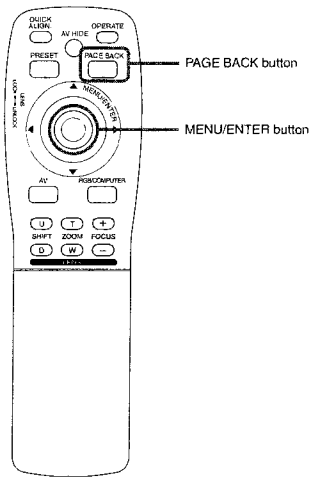


Note

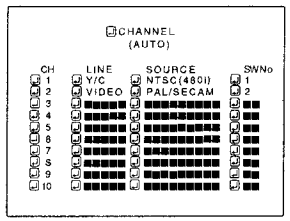
- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode. (If no line is registered, you cannot set any "SOURCE" item.)

Setting Up Channels (SWNo. setup)

■ Remote control unit



■ CHANNEL setup • selection menu



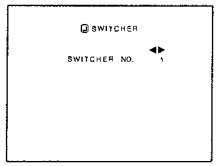
Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode. (If no line is registered, you cannot set any "SW No" item.)

■ When e switcher number "SWNo" is selected :

The "Switcher number setup menu" is displayed.

- To be able to display a menu, a "SOURCE" needs to be already set.



(SWITCHER No. setting menu)

1 Press MENU/ENTER toward the ◄ or ► mark to select a switcher number.

- Numbers that you can select from are numbers from 1 to 20 and characters "■■" that signify non-registration.
- If you press MENU/ENTER toward the ◄ mark, the number becomes smaller, and pressing the button toward the ► mark makes the number larger.
- If you select "■■", "SWNo" will be deselected.
- If the selected channel is the same with the one in ( ) under the "CHANNEL" display at the top of the CHANNEL setup selection menu, the registration or settings cannot be cleared.

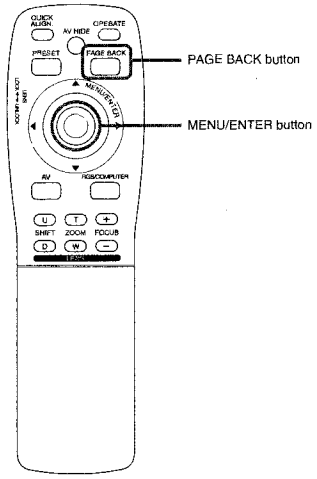
2 Press the PAGE BACK button to set.

- When you press PAGE BACK, the switcher number is set, and the display returns te the "CHANNEL setup/selection menu".

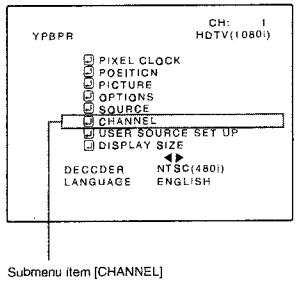
No.51666

Changing Channels (CH Change)

■ Remote control unit



■Main menu



Note

- The selected item is shown in magenta color. Items shown in gray color cannot be opereted or set in the current mode.

Channels which have lines and sources registered can be switched. The channels can be switched by using either a direct channel or the "CHANNEL setup • selection" menu.

■ To switch channels using a "DIRECT CHANNEL"

1 Press PAGE BACK while no menu is displayed.

- A channel No. is displayed on the right upper area of the screen.
- A channel number where lines and sources are registered is displayed. (If such a channel is not available, AUTO will be selected.)

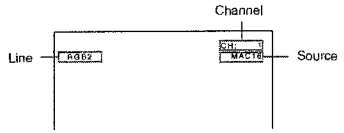
(Direct channel switching menu)

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a channel number.

- The numbers that you can select from are from 1 to 10 and AUTO.
- If you press MENU/ENTER toward the ▼ mark, the number becomes smaller, and pressing the button toward ▲ makes the number larger.
- Pressing PAGE BACK cancels the selection.

3 Press the MENU/ENTER button to set.

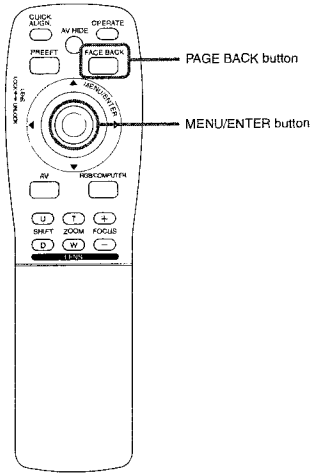
- The screen switches automatically to the line and source which are set for the channel.



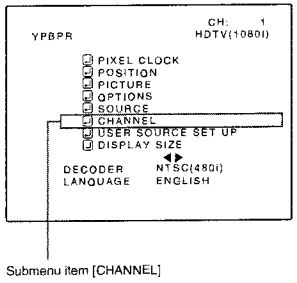
- If the source being input to the projector is not registered on the selected channel, a "?" mark is placed before the source name.

Changing Channels (CH Change) (Cont.)

■ Remote control unit



■Main menu



Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

■ To switch on the "CHANNEL setup • selection" menu :

1 Press the MENU/ENTER button.

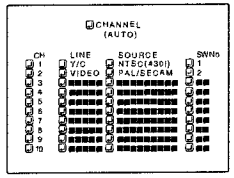
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "CHANNEL".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "CHANNEL setup • selection menu", appears on the screen.



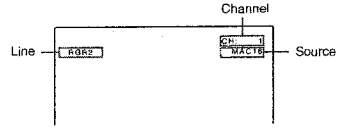
(CHANNEL setup • selection menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select the channel (CH) you want to switch to.

- The selected CH is shown in magenta color.

5 Press the MENU/ENTER button to set.

- The line input, source and switcher number registered to the channel are selected.



- If the source being input to the projector is not registered on the selected channel, a "?" mark is placed before the source name.

- To be able to select a channel, line input, source and switcher number need to be already registered.

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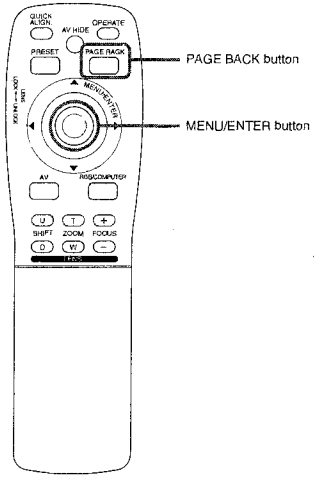
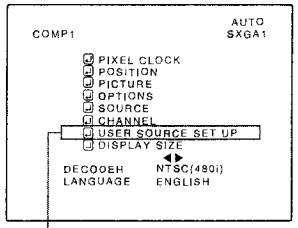
DLA-M4000LU
DLA-M4000LE

Setting Up (or Changing) User Sources

■ Remote control unit



■Main menu



Submenu item [USER SOURCE SET UP]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

A maximum of 10 types of information can individually be registered regarding the source being input and projected through the line connection.

■ Preparation

With source setup "AUTO" selected, keep signal being input.

1 Press the MENU/ENTER button.

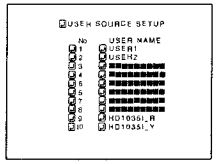
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "USER SOURCE SETUP".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "USER SOURCE SETUP menu", appears on the screen.
- "■" is displayed for Nos which have no user source registered.



(USER SOURCE set up menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select a "No" where no user registration has been made.

- The selected item (text display) is shown in magenta color.

5 Press the MENU/ENTER button to set.

- The source data of the line now selected is registered as a user source and a temporary user name is displayed.
- If you select and set on the No which has a source registered, the source is overwritten by a new source.

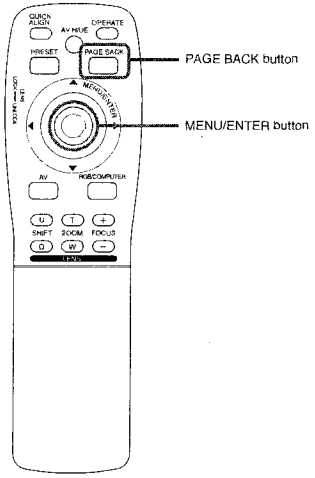
■ To return to the main menu, press PAGE BACK. To finish the main menu, press PAGE BACK again.

Note

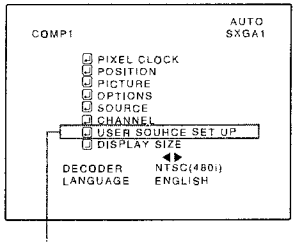
- When EXT. IN (Video, Y/C or YPBPR) is selected, the display size cannot be changed.

Setting Up (or Changing) User Sources (Cont.)

■ Remote control unit



■Main menu



Submenu item [USER SOURCE SET UP]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

To change the registered user source name.

1 Press the MENU/ENTER button.

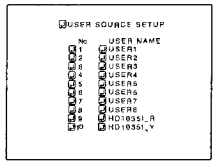
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "USER SOURCE SETUP".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "USER SOURCE SETUP menu", appears on the screen.



(USER SOURCE set up menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select the number, "No", of the user name to be changed.

- The selected item (text display) is shown in magenta color.

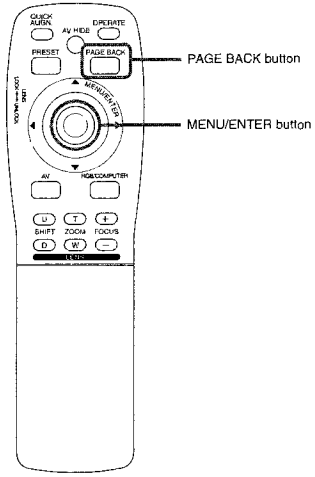
5 Press MENU/ENTER toward the ► mark to select the "USER NAME".

- The selected item (text display) is shown in magenta color.
- To be able to select a "USER NAME", a source needs to be already registered.

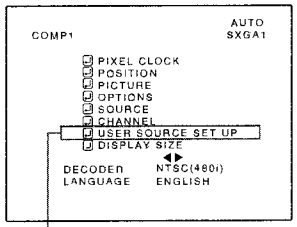
(To be continued on the next page)

Setting Up (or Changing) User Sources (Cont.)

■ Remote control unit



■Main menu



Submenu item [USER SOURCE SET UP]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

6 Press the MENU/ENTER button to set.

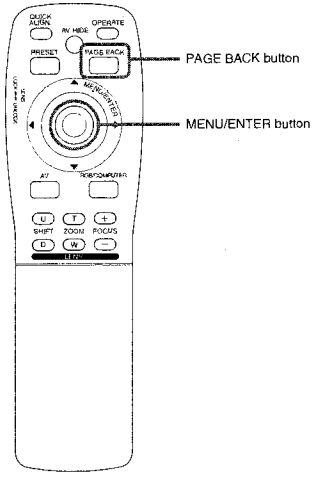
- The "USER NAME setup menu" is displayed.

(USER NAME setup menu)

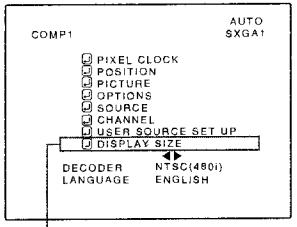
1. **Press MENU/ENTER toward the ◄ or ► mark to select positions where to enter characters.**
2. **Press MENU/ENTER toward the ▲ or ▼ mark to select positions where to enter characters.**
   - You can select any characters from A to Z, 0 to 9, _ and space.
3. **Press MENU/ENTER toward the ▲ or ▼ mark to select positions where to enter characters.**
   - The display returns to the "USER SOURCE SETUP" screen.
   - To delete a user name, overwrite the user name with spaces. However, if this user name area is registered as a source to any other channel on the "CHANNEL setup • selection" menu, or if this user name area is selected in AUTO mode or dedicated (forced) mode, the user name cannot be deleted. The user name before change will be displayed.
   - Up to 9 characters can be entered.

Setting Up (or Changing) the Display Size

■ Remote control unit



■Main menu



Submenu item [DISPLAY SIZE]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

In this section, the number of horizontal effective dots and that of vertical effective lines of the source being input are set.

1 Press the MENU/ENTER button.

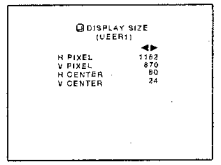
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "DISPLAY SIZE".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "DISPLAY SIZE adjustment menu", appears on the screen.



(DISPLAY SIZE adjustment menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select an item to be adjusted.

- The selected item (text display) is shown in magenta color.

5 Press MENU/ENTER toward the ◄ or ► mark to adjust the item.

- To adjust other items, repeat steps **4** and **5**.

Memo

- It is recommended that you perform adjustments in the following order:
  1. Adjustment of H PIXEL and V PIXEL
  2. Automatic adjustment of QUICK ALIGNMENT
  3. Adjustment of H CENTER and V CENTER

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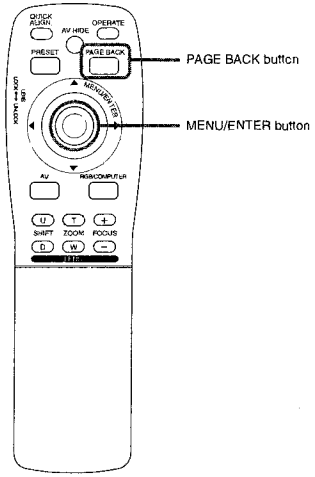
DLA-M4000LU
DLA-M4000LE

Setting Up (or Changing) the Display Size (Cont.)

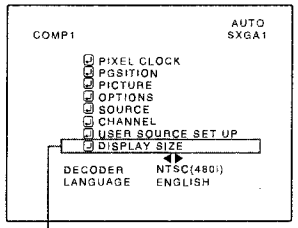
■ Remote control unit



Adjustment item	Contents of adjustment
H PIXEL	Adjusts the number of horizontal effective dots. Adjustment value (640↔1360)
V PIXEL	Adjusts the number of vertical effective dots. Adjustment value (350↔1024)
H CENTER	Adjusts the horizontal display position. Adjustment value (0↔639)
V CENTER	Adjusts the horizontal display position. Adjustment value (1↔511)

■ **To return to the main menu, press PAGE BACK. To finish the main menu, press PAGE BACK again.**

■Main menu



Submenu item [DISPLAY SIZE]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Filter Maintenance and Light-Source Lamp Replacement

Cleaning and Replacing the Filter

The filters should be cleaned periodically. If they are heavily stained, do not become clean if cleaned, or are damaged, replace them with new filters (Parts number: LC30505); otherwise, dirt and dust may get inside, possibly causing an adverse effect on the screen and preventing you from enjoying clear pictures.

■ **The projector has two filters installed, one on the right side and the other on the back.**

1 Bring the projector into stand-by state, and turn off the MAIN POWER switch.

Put the projector into stand-by, and make sure the STAND BY indicator is lit, then tun off the MAIN POWER switch. After that, disconnect the power cord from the wall outlet and the projector. For detailed procedures, refer to "Turning off the power" (page 25).

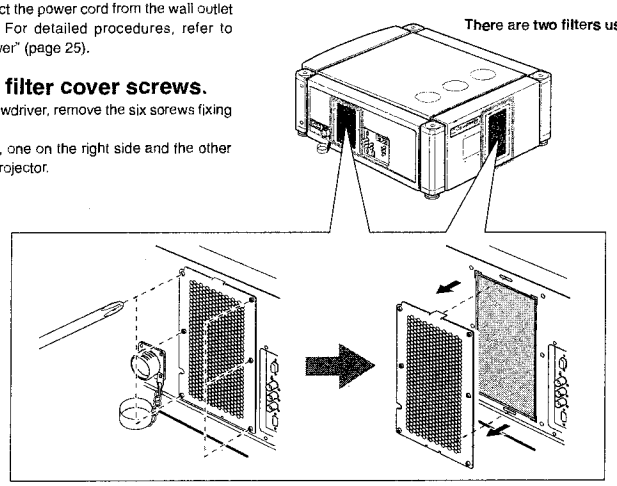
2 Remove the filter cover screws.

Using a Phillips screwdriver, remove the six sorews fixing each filter.
Two filters are used, one on the right side and the other on the back of the projector.

Note

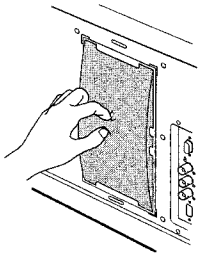
- If the filter is clogged with dirt, etc., the projector goes into an emergency mode (the EMERGENCY indicator blinks).
Sc, clean the filter periodically. For the emergency mode, refer to pages 8 and 24.

There are two filters used.



3 Remove the filters.

To remove the filter, pinch the center portion of the filter with your fingers and pull it toward you.
(The filter is held by four tabs.)



(To be continued on the next page)

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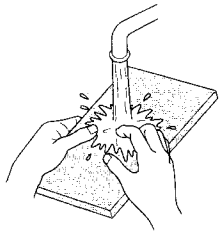
Cleaning and Replacing the Filter (Cont.)

4 Clean the filters.

Wash the filter in water with neutral detergent, and dry it in the shade.



5 Reinstall the filters.

To reinstall the filters to the projector, reverse the procedure for removing . Finally, be sure to reinstall the filter covers.

Notes

- Install the filters correctly; otherwise the projector will not operate normally.
- If the filters and/or filter holders are damaged, the projector may fail to operate. Then, replace with new parts.

CAUTIONS

- **Put on rubber gloves when using neutral detergent.**
- **After you have washed the filter in water, make sure the filter is completely dry before reinstalling it. Otherwise, electric shock or malfunction could occur.**
- **Do not clean the filter using a vacuum cleaner. Since the filter is soft, it may be sucked into the vacuum cleaner or damaged.**

About Light-Source Lamp Replacement

The light-source lamp has its service life. It is approximately 1000 hours.

When the light-source lamp approaches the end of its service life, its degradation progresses rapidly. When the lamp's used hours exceed 000 hours, the projector's LAMP indicator comes on. Also, at the start of projection (lamp energized), the message "REPL.-LAMP" appears on the projection screen for about two minutes. Then, the light-source lamp needs to be replaced. When lamp's service has reached 1000 hours, the projector's LAMP indicator starts blinking. The specified lamp replacement period is 1000 hours, but depending on use conditions, the replacement period may vary. If video image is dark and its color tint is extraordinary even after you have adjusted color tint and brightness, replace the light-source lamp a little earlier.
For replacing the light-source lamp, consult the dealer where you purchased your projector or a local service center.

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Troubleshooting

Solutions to common problems related to your projector are described here. If none of the solutions presented here solves the problem, unplug the projector and consult a authorized dealer or service center.

Symptom	Probable cause	Corrective action	Page
Power is not supplied.	• Is the power cord disconnected?	• Insert the power cord (plug) firmly.	23
	• Is the main power switch turned on?	• Turn on the MAIN POWER switch.	25
	• Is the correct power voltage used?	• Check that AC220V is supplied.	3, 65
	• Has the breakertripped open?	• Check that the breaker is closed.	——
	• Has the lamp protective function activated? (This can occur if the power is shut down due to a power failure, etc.)	• Wait until the lamp has cooled down. (Turn on the main power sand let the fans cool the lamp.) About 10 minutes later, press OPERATE on the remote control.	——
Light is not emitted, or light level is low.	• Is the lens cap removed?	• Remove the lens cap.	23
	• Is the lamp life near its end?	• Check the lamp use time on the menu, and if the lamp life is near its end, arrange for a replacement lamp, or replace a little earlier.	41, 59
	• Has the projector been moved from its installed place?	• Check the installed position.	——
With power on, operation starts but stops in a few minutes.	• Is the air intake or exhaust area blocked?	• Turn off the MAIN POWER switch, remove any blocking objects, and turn on the MAIN POWER switch again.	8, 9, 16
Video image does not appear.	• Is the correct input selected?	• Select the correct inputs with the AV and RGB buttons.	26
	• Are connected devices connected correctly?	• Connect connected devices correctly.	20, 21
	• Are signals being supplied from the connected devices?	• Set connected devices correctly.	——
	• Are input signals (scanning frequency, etc.) appropriate?	• Check if the signal is correct as input (scanning frequency, etc.). Input the appropriate signal.	19
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO or to the correct dedicated source (forced mode).	44, 46
Video image dims.	• Is brightness adjusted correctly?	• Adjust brightness on the menu.	38, 40
	• Is focus adjusted correctly?	• Adjust focus with the remote control's FOCUS (+/–) buttons.	27, 30
	• Is distance too short or too long?	• Set the projector at the correct distance.	18
Color is poor or unstable.	• Are TRACKING and PHASE adjusted correctly?	• Adjust TRACKING and PHASE on the menu.	30, 36
	• Is picture quality (color density, etc.) adjusted correctly?	• Adjust picture quality on the menu.	38, 40
	• Is the correct CLAMP selected?	• Select the correct CLAMP on the OPTION MENU.	41, 42

(To be continued on the next page)

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Troubleshooting (Cont.)

Symptom	Probable cause	Corrective action	Page
During video replay, video image sometimes is disturbed	• have Installation adjustment been performed?	• For installation, consult the dealer where you purchased the projector or a local service center.	——
Image color is poor or image is disturbed	• Is picture quality (color desity, etc.) adjusted correctly?	• Adjust picture quality on the menu.	38, 40
	• Is the correct broadcast system (color system) selected?	• Set the broadcast system (color system) to AUTO.	34
	• Are signals (scanning frequency, etc.) to connected devices appropriate?	• Check if the signal is appropriate (scanning frequency, etc.), and input the appropriate signal.	19
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO. If the problem still persists, set it to the correct dedicated source (forced mode).	44 ~ 46
Specific colors fail to be displayed	• Are specifications of the signal being input matching those of the video input card?	• Check specifications of both signal being input and video input card.	——
	• Is the input cable connected correctly?	• Check cable connections.	21
	• Has the lamp's life come to its end?	• Check the used lamp hours on the menu, and if the lamp life is near its end, consult the dealer where you purchased the projector or a local service center.	60
The upper part of the video image bows or distorts.	• While computer system signal is input, isn't a sync signal for composite sync (Cs) or G on sync being input?	• Input separate sync signals for vertical sync (V) and horizontal sync (H) signals.	10
	• Isn't signal with much jitter or skew distortion being input to a video deck?	• Input signals with little jitter or distortion.	——
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO. If the problem still persists, set it to the correct dedicated source (forced mode).	44 ~ 46
	• Have the channel's setup contents been changed?	• Check the setup contents been changed.	47 ~ 51
The projection position on the screan has shifted.	• Have the channel's setup contents been changed?	• Check the setup contents of the channel and correct them if necessary.	47 ~ 51
	• Is sync signal being input correctly?	• Check sync signal and related connection.	10
	• Has the projector been moved from its installed place?	• Check the installed position.	——
Video image suddenly go out.	• Aren't video tumed off by pressing the remote control's AV HIDE button?	• Press the remote control's AV HIDE button to turn video on.	12
	• Are all ccler video signals being input?	• Check signals and connections.	19 ~ 23

Troubleshooting (Cont.)

Symptom	Probable cause	Corrective action	Page
Lens shift adjustment is not possible.	• Is the shift center lock pin for shipment left attached?	• Remove the shift center lock pin, and then make adjustments. (For how to remove the shift center lock pin, consult the dealer where you purchased the projector or a local service center.)	16
Remote control unit does not work.	• Are batteries installed correctly?	• Match the polarities of batteries correctly (+ to + and - to -).	13
	• Are batteries exhausted?	• Replace with new batteries.	13
	• Is there a shielding object between the remote control unit and the remote sensor?	• Remove any shielding objects.	——
	• Is the distance too long?	• Use the remote control unit at a nearer point.	22
	• Is the remote control's LENS LOCK↔UNLOCK switch set to LOCK?	• Set the remote control's LENS LOCK↔UNLOCK switch to UNLOCK?	12

■ When the emergency indicator starts blinking:

Refer to the CAUTION and NOTES on page 24.

* This projector is equipped with a microcomputer that may operate abnormally due to interference from external components. If this happens, turn off the main power and disconnect the power cord from the wall AC outlet. Then reconnect the power cord to AC outlet and turn on the main power again.
(For the turning on and off the power, see pages 26)

No.51666

Specifications

Optical mechanism system

• Projection method	3D-ILA device, 1 lens, 3 primary color optical shutter method
• D-ILA device	0.9" measured diagonally (1365 ×1024 pixels) × 3 (Total number of pixels : 4,193,230)
• Projecting lens	GL-M4023SZ 3:1~7:1 zoom lens
(separately available)	GL-M4015S 1.5:1 fixed focus lens
• Screen size	60" to 300" [recommended] to 600" [maximum] measured diagonally (*with aspect ratio : 4 : 3)
• Light-source lamp	1.6 KW xenon lamp

Electrical system

• Color system	NTSC, NTSC4.43, PAL, SECAM (* Automatic switching / manual switching)
• Resolution	1365 × 1024 dots (*S-XGA full resolution, during RGB input)
	1000TV lines (*Horizontal resolution, aspect ratio 4 : 3, during video input)
• Scanning frequency	Horizontal frequency : 15 kHz ~ 82 kHz
	Vertical frequency : 50 Hz ~ 78 Hz

Input / output

[EXT. IN (AV IN input)] * The Y/C (S-video) and VIDEO (composite video) signals can be input with the video board installed.

• Y/C
1-line, mini-DIN 4 pin × 1 (* With the video board, separately available, installed)
Y (luminance signal) : 1V(p-p), 75Ω (negative sync)
C (chroma signal) : 0.286V(p-p) (burst signal), 75Ω [NTSC]
: 0.3V(p-p) (burst signal), 75Ω [PAL]

• VIDEO
1-line, BNC × 1 (* With the video board, separately available, installed)
Composite video signal : 1V(p-p), 75Ω (negative sync)

• Y, P_B/B-Y, P_R/R-Y
1-line, BNC × 3
Component (Y,B-Y,R-Y) signals
Y : 1V(p-p), 75Ω (negative sync or 3-value syno)
P_B/B-Y : 0.7V(p-p), 75Ω
P_R/R-Y : 0.7V(p-p), 75Ω

DTV-format signals
[480i (ITU-R BT. 601-4), 480p (SMPTE 293M)]
Y : 1V(p-p), 75Ω (negative sync)
P_B, P_R : 0.7V(p-p), 75Ω
[720p (SMPTE 296M), 1080i (SMPTE 274M)]
Y : 1V(p-p), 75Ω (3-value sync)
P_B, P_R : 0.7V(p-p), 75Ω

[RGB IN (RGB input)]

• RGB IN-1 (PC)
1-line, D-sub 3-row 15 pin × 1
Analog RGB signal
R : 0.7V(p-p), 75Ω
B : 0.7V(p-p), 75Ω
G : 0.7V(p-p), 75Ω
G on Sync : 1V(p-p), 75Ω (negative sync)
Syno signal : 1V(p-p) to 5V(p-p), high impedance (positive/negative polarity)
* Some connected devices may not correspond to oomposite syno (Cs) or G on sync signal.

• RGB IN-2
1-line, BNC × 5
Analog RGB signal
R : 0.7V(p-p), 75Ω
B : 0.7V(p-p), 75Ω
G : 0.7V(p-p), 75Ω
G on sync : 1V(p-p), 75Ω (negative sync)

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Specifications (Cont.)

Horizontal sync/composite sync signal (H/Cs)
H : 1V(p-p) to 5V(p-p), high impedance (positive/negative polarity)
Cs : 1V(p-p) to 5V(p-p), high impedance (positive/negative polarity)
Vertioal sync signal (V)
V : 1V(p-p) to 5V(p-p), high impedanoe (positive/negative polarity)
* Some connected devices may not correspond to oomposite sync (Cs) or G on sync signal.

[RGB OUT (RGB OUTPUT)]

• RGB OUT
1-line, D-sub 3-row 15-pin × 1
Analog RGB signal
R : 0.7V(p-p), 75Ω
B : 0.7V(p-p), 75Ω
G : 0.7V(p-p), 75Ω
G on sync : 1V(p-p), 75Ω (negative sync)
Horizontal sync/composite sync signal (H/Cs)
H : TTL level (Polarity : Same for input)
Cs : TTL level (Polarity : Same for input)
Vertioal sync signal (V)
V : TTL level (Polarity : Same for input)

[CONTROL]

• RS-232C : 1-line, D-sub 9-pin × 1
* RS-232C-interface specified control terminal for oontrolling this projector with a personal computer.

• REMOTE : 1-line, mini-jack × 1

General

• Power requirements	AC 220 V~240 V, 50 Hz/60 Hz
• Power consumption	12 A (at 220V)
• Allowable operation temperature	+ 5°C to + 40°C (41°F to 104°F)
• Allowable relative humidity	90% or less (no condensation)
• Allowable storage temperature	– 5°C to + 50°C (23°F to 140°F)
• Maximum outside dimensions	Approx. (W)687 mm × (H)420 mm × (D)793 mm ($27\text{-}^{1}/_{16}$" × $15\text{-}^{9}/_{16}$" × $31\text{-}^{1}/_{14}$") (excluding protruding parts)
• Weight	Approx. 70.0kg (154 lbs.)
• Accessories	(Refer to page 5.)

** Design and specifications are subject to change without notice.*
** D-ILA devices are manufactured with a very high-precision technology, allowing 99.99% of the pixels to be effective. Only 0.01% or less of the pixels are missing or always on.*
** For easy understanding, pictures and illustrations are shown by being emphasized, omitted or composed, and may be more or less different from actual products.*
**TRADEMARKS*
IBM ,IBM PC, and VGA are registered trademarks of International Business Machines Corporation. Macintosh is registered trademarks of Apple Computer, Inc.
VESA is a trademark of the non-profit organization Video Electronics Standard Association.
All other product names mentioned herein are used for identification purposes only, and may be the trademarks or registered trademarks of their respective companies.

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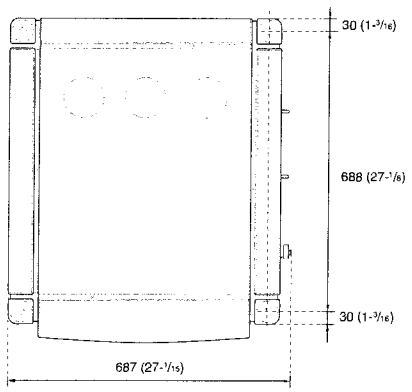
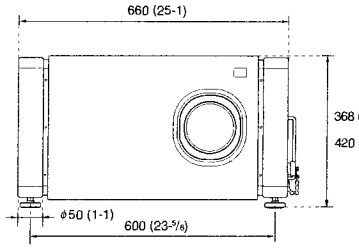
Outside dimensions

■ Top

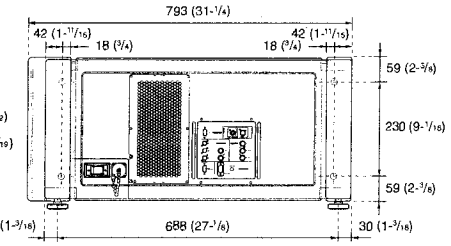
Unit: mm (inch)



■ Front



■ Side



DTV-format signals

* The following are DTV-format signals that can be input.

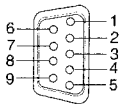
DTV-Formats	480i	480p	720p	1080i
Signal Standard	ITU-R BT. 601-4	SMPTE 293M	SMPTE 296M	SMPTE 274M
Scanning Line / Frame	525	525	750	1125
Effective Samples x Scanning Lines	720 x 435	720 x 483	1230 x 720	1920 x 1080
Samples / Total Line	853	858	1650	2200
Field Frequency (Hz)	59.94	59.94	60/59.94	60/59.94
Line Frequency (Hz)	15734	31468.5	45000/44955	33750/33716.25
Interlace Ratio	0.5	1	1	0.5

Pin assignment (Specifications for torminals)

■ Y/C terminal

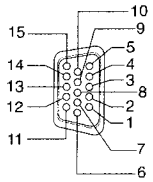
Pin number	Signal name
1	GND (Y)
2	GND (C)
3	Y
4	C

■ RS-232C terminal



Pin number	Signal name	Pin number	Signal name
1	N/C	6	N/C
2	RD	7	N/C
3	TD	8	N/C
4	N/C	9	N/C
5	GND		

■ COMPUTER IN-1 (PC) / COMPUTER OUT Terminal



Pin number	Signal name	Pin number	Signal name
1	Red	9	N/C
2	Green	10	GND (SYNC)
3	Blue	11	GND
4	N/C	12	N/C
5	N/C	13	H.SYNC
6	GND (Red)	14	V.SYNC
7	GND (Green)	15	N/C
8	GND (Blue)		

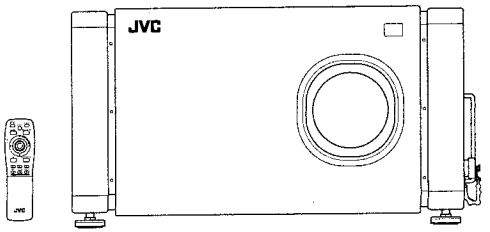
JVC

DLA-M4000LE D-ILA SUPER PROJECTOR

D-ILA™ SUPER PROJECTOR

DLA-M4000LE

INSTRUCTIONS



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VICTOR COMPANY OF JAPAN, LIMITED

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LCT0532-001A
1199-K-M-Ni

DLA-M4000LU
DLA-M4000LE

Thank you for purchasing this projector. Before using it, read and follow all instructions carefully to take full advantage of the projector?s capabilities.

SAFETY PRECAUTIONS

IMPORTANT INFORMATION

WARNING :
TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

WARNING :
THIS APPARATUS MUST BE EARTHED.

CAUTION :
To reduce the risk of electric shock, do not remove cover.
Refer servicing to qualified service personnel.

MAGHINE NOISE INFORMATION (Germany only)
Changes Machine Noise Information Ordinance 3. GSGV, January 18, 1991: The sound pressure level at the operator position is equal or less than 70 dB(A) according to ISO 7779.

About burning-in of the D-ILA device

Do not allow the same still picture to be projected for a long time or an abnormally bright video picture to be projected. Do not project video images with high-intensity or high-contrast on a screen. The video image could be burned in to the D-ILA device.
Use special care when projecting video games or computer program images. There is no problem with ordinary video-cassette playback images.

WARNING
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFEOUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD**. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these "Important Safeguards" carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.)

  For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep distance more than 60 cm.

SAFETY PRECAUTIONS (Cont.)

- This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.
- For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
- Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
- Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:
  a) When the power supply cord or plug is damaged.
  b) If liquid has been spilled, or objects have fallen on the product.
  c) If the product has been exposed to rain or water.
  d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e) If the product has been dropped or damaged in any way.
  f) When the product exhibits a distinct change in performance – this indicates a need for service.
- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
- When connecting other products such as VCR's, and personal computers, you should turn off the power of this product for protection against electric shock.
- Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.
- Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
- Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
- Xenon gas is enclosed with high pressure inside the light-source lamp (lamp unit) of this projector. If you drop or impart a shock to the lamp, or discard it as is, there is the possibility of explosion, leading to personal injury. Use special care when handling the lamp. For any unclear points, consult your product dealer.
- Use only the accessory cord designed for this product to prevent shock.

  The power supply voltage rating of this product is AC 200 V~ 240 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

  When it is used by other power supply voltage, power cable must be changed.

  Consult your product dealer.

*DO NOT allow any unqualified person to install the unit.
Be sure to ask your dealer to install the unit (eg. attaching it to the ceiling) since special technical knowledge and skills are required for installation.
If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

No.51666

POWER CONNECTION
(United Kingdom only)

WARNING
Do not cut off the main plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adapter or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the main supply.

If a new main plug has to be fitted, then follow the instruction given below:

WARNING:
THIS APPARATUS MUST BE EARTHED.

IMPORTANT:
The wires in the mains lead on this product are coloured in accordance with the following cord:

Green and Yellow	: Earth
Blue	: Neutral
Brown	: Live

As these colours may not correspond with the coloured making identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal which is marked ⏚ with the letter E or the safety earth or coloured green or green-and-yellow.

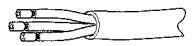
The wire which is colcured blue must be connected to the terminal which is marked with the letter **N** or coloured black.

The wire which is coloured brown must be connected tc the terminal which is marked with the letter L or coloured red.

When replacing the fuse, be sure to use only a correctly rated approved type, re-fit the fuse cover.

IF IN DOUBT —— CONSULT A COMPETENT ELECTRICIAN.

Information on the power cord plug
The power cord of this projector does not have a wall outlet plug attached. We recomend you to select and attach a plug which matches your wall outlet.
Use a plug rated 250V/20A.
The wires ends of the power cord are covered for protection. Remove the covers before attaching the plug to the power cord.



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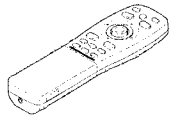
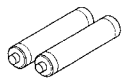
Accessories

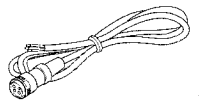
The following accessories are included with this projector. Check for them; if any item is missing, please contact your dealer.



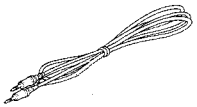
Remote control unit (RM-M4000G)



AA/R6-size dry cell battery (×2) (for checking operation)



Power code [approx. 3.35 m]



Remote control cable (approx. 15 m)

Memo

In addition to the above accessories, an operator manual (this book) and warrantee sheet are included. If any is missing, also contact your dealer.

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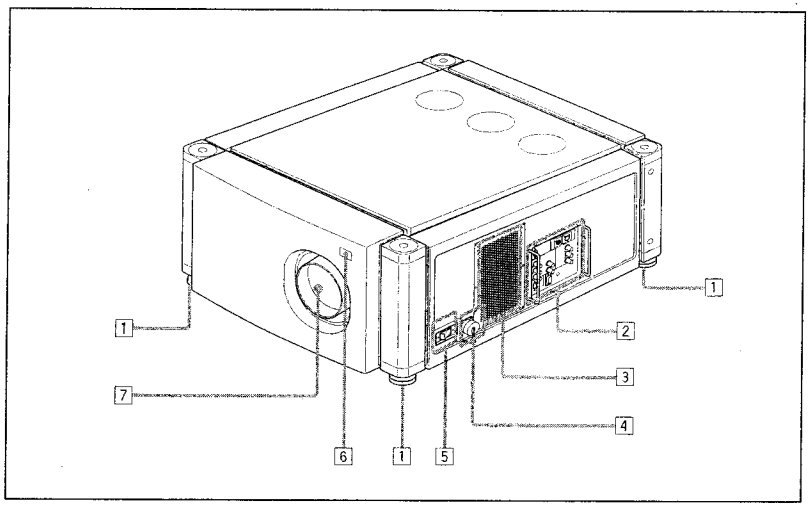
Controls and Features

Front Side / Top Surface / Right Side



1 Adjustable foot
It is set at the shortest position when shipped from the factory. Turn the foot to make the projector level. Adjustment can be made in the range of ±4° from the vertical and ±5° from the horizontal.

2 Connector panel
For details, refer to "Connector Panel" on page 10.

3 Air intake area (filter)
Air is taken in through this area to cool the light-source lamp. If this area is blocked or if something that obstructs taking in or exhausting air is placed around the projector, heat may build up inside and could cause a fire. For details, refer to "Precautions for Installation" on page 14.

CAUTIONS

- Be careful as paper, cloth or soft cushion could be drawn in if placed nearby. Do not block the intake area, or heat may build up and could cause a fire.
- Clean the filter periodically. For details, refer to "Cleaning and Replacing the Filter" on page 59.
  Deposition of dirt on the filter works to reduce the cooling effect, causing heat to build up inside, which could cause a fire or malfunction.

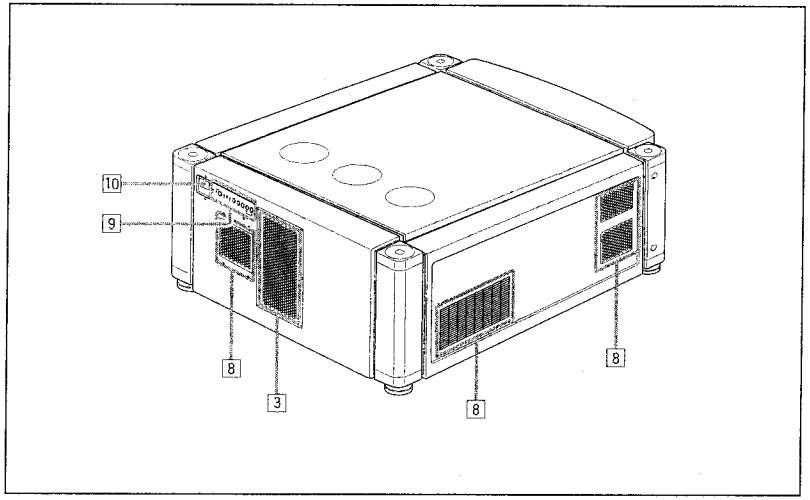
4 AC IN (power input) terminal
This is the power input terminal where the supplied power cord is connected. For details, refer to page 23.

5 MAIN POWER switch
This is the main power switch. When it is turned on, the projector goes into stand-by state, and the STAND BY indicator on the control panel comes on.
ON [I]: The main power turns on.
OFF [O]: The main power turns off.

6 Remote sensor
When operating with the remote control, aim it toward this sensor. An additional remote sensor is provided on the back of the projector. The effective operating distance of the remote control is 10 m from each of the sensors. The effective operating range of angles is 50° left and right, and 15° up and down.

7 Lens mount
Attach a projection lens separately sold to this mount.
GL-M4023SZ 3 : 1~7 : 1 zoom lens
GL-M4015S 1.5 : 1 fixed-focus lens
For information on attaching the lens, consult the dealer or service center who performed the installation and adjustments of your projector.

Left-hand side / Back Side



8 Exhaust vents
Vents for cooling fans through which warm air comes out.

9 Control panel
For details, refer to "Control Panel" (page 8 and 9).

10 Remote sensor
When operating with the remote control, aim it toward this sensor. An additional remote sensor is provided on the front of the projector. The effective operating distance of the remote control is 10 m from each of the sensors. The effective operating range of angles is 50° left and right, and 15° up and down.

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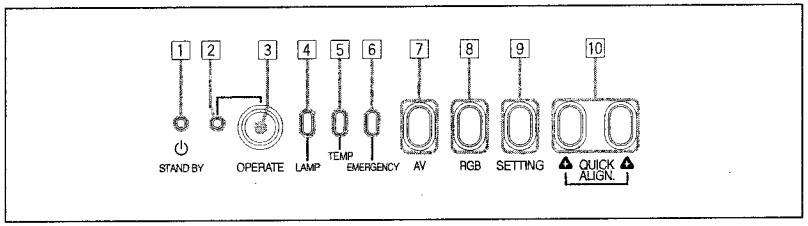
Control Panel



1 STANB BY Indicator
ON : When in stand-by mode.
Blinking : When in cool-down mode.

CAUTION

- The cool-down mode continues for about 20 seconds, during which projeotion cannot be started again. After the cooling-down period, the projector goes into stand-by mode, but the cooling fans will continue to run for about 10 minutes more.
- The purpose of the cool-down mode is to prevent inner parts from being deformed or broken by heat from the heated lamp as well as to prolong the life of the lamp. Do not turn off the main power switch while in the cool-down mode. Also, do not hlock any of exhaust openings while in cool-down mode.

2 OPERATE indicator
ON: When the projector is in operation (projecting)

3 GPERATE button
When the projector is in the stand-by mode, press this button for one or more seconds, and the main power switch is turned on, causing the OPERATE indicator to light. Press it again, and the projeotor goes into the cool-down mode, then stand-by mode.

Memo

While tn the cool-down mode:
If you press the OPERATE buttcn, thc projector is not tuned on.

4 Lamp indicatcr
ON : After the light-source lamp has been used for more than approx. 900 hours.
Blinking : Replace the lamp.(Ask the dealer where you purchased your projector to replace the lamp.)

5 TEMP indicator
ON: The temperature inside the projector has abnormally risen.

Note

- While the TEMP indicator is on (during abnormal temperature), the power is automatically cut off, and an emergency mode is shown (with the EMERGENCY indicator blinking).

6 EMERGENCY indicator
Blinking: Something abnormal has occurred with the projector.

Memo

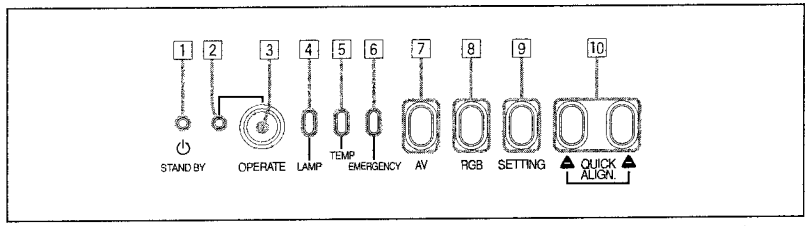
About the amergancy mode:
The emergency mode is shown when the following anomalies have occurred with the projector (the EMERGENCY indicator blinks). In the emergency mode, projection is automatically interrupted and the cooling fans operate for about 20 seconds.

- **When the filter is clogged.**
- **When the light-source lamp has suddenly gone off.**
- **When the fans have stopped.**
- **When the temperature inside has risen abnormally high.**

CAUTION

- **When an emergency mode ie shcwn:**
  After the cooling fans have stopped, turn off the main power switch and unplug the power oord from the wall outlet. Check that the filter covers are correctly installed. Then, plug in the power oord again and try operating the projector. If it goes into an emergency mode again, affer the cooling fans have stopped, turn off the main power switch, unplug the power cord, and call your dealer for repair.

Control Panel (Cont.)



7 AV buttcn
Use this button to select a device such as a video deck connected to the EXT. IN terminal of the projector. Each time you press the button, the device selected changes as follows:

* Y/C and VIDEO can be used only when a video board separately sold has been installed.

8 RGB button
Use this button to select a device connected to the RGB -1 or -2 terminals. Each time you press the button, the seleotion changes as follows:

9 SETTING button
Use this button to call up the setting menu. Por details, refer to "Making Basic Settings" on page 30.

10 GUICK ALIGN. button
While a menu screen is shown, use this button to adjust the values for the item selected. When no menu is shown, the quick alignment function works.

- **When a menu is shown**
  ▲ button: The value for the selected item increases.
  ▲ button: The value for the selected item decreases.
- **When no menu is shown**
  Press the ▲ button and ▲buttcn at the same time: OUICK ALIGNMENT is displayed on the screen and the quick alignment function works (TRACKING, PHASE, H. POS. and V. POS. are automatically adjusted). When the adjustment is finished, the display goes off automatically.

Memo

The quick alignment function :
- Works for computer input (RGB- 1 and - 2 input terminals) signals.
- Does not work for video input (EXT. IN input terminal) signals.

CAUTION

- Automatic adjustment with the quick alignment function should be done on a bright still-picture screen. This funotion may not work correctly on a dark screen or motion-pioture screen. If adjustment with this function is not satisfactory, adjust TRACKING, PHASE, H. POS. and V. POS. manually (see pages 30, 36 and 37).

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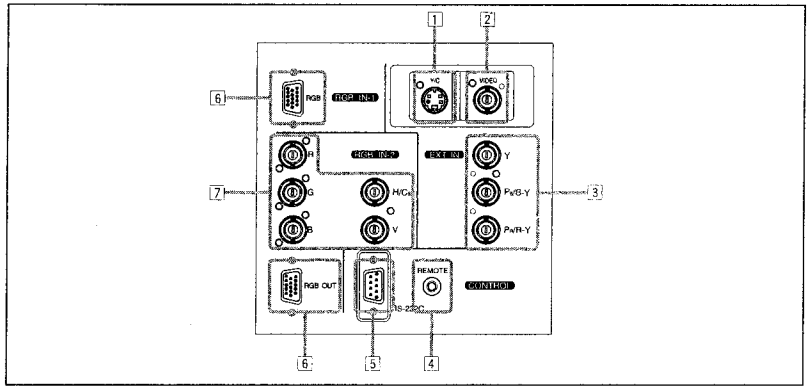
Connector Panel



1 Y/C (S video) input terminal (Mini DIN 4 pin)
Connect this terminal to the S video output terminal of a video deck, etc.
* This terminal can be used if a video board (PK-G1101D) sold separately has been installed. The terminal was not provided when the projector was shipped from the factory.

2 VIDEO (composite video) input terminal (BNC)
Connect this terminal to the composite video output terminal of a video deck, etc.
* This terminal can be used if a video board (PK-G1101D) sold separately has been installed. The terminal was not provided when the projector was shipped from the factory.

3 Y, PB/B-Y, PR/R-Y input tarminals (BNC)
These are input terminals for component (Y, B-Y, R-Y) signals or DTV-format (Y, PB, PR) signals.
Device with component signal output terminals, such as for NTSC and DTV-format, can be connected.
* For details about DTV-format signals (460i, 480p, 720p, 1080i) compatible with this unit, refer to page 66.

4 REMOTE terminal (mini jack)
This terminal is used to directly connect the remote control to the projector. Use the remote control cable supplied. An infrared remote control extension unit can also be connected to the jack.

5 RS-232C terminal (D-sub 9 pin)
This is a RS-232C interface-specified terminal. This projector can be controlled by a computer connected externally.

6 RGB OUT (RGB output) terminal (D-sub 3-row 15 pin)
The oomputer input signal projected on the screen is output. A display unit can be used by connecting it to this terminal.

7 RGB IN (RGB input) -2 terminal (BNC)
These are input terminals for analog RGB signals, vertical sync (V) signals, and horizontal sync (H) signals / composite signals(Cs). Devices which have analog RGB signal output terminals can be connected.
* **Input of external sync signals is automatically detected.**
Detection of H/V signals or Cs signals causes automatic switch to external sync. The priority order is H/V > Cs.

CAUTION

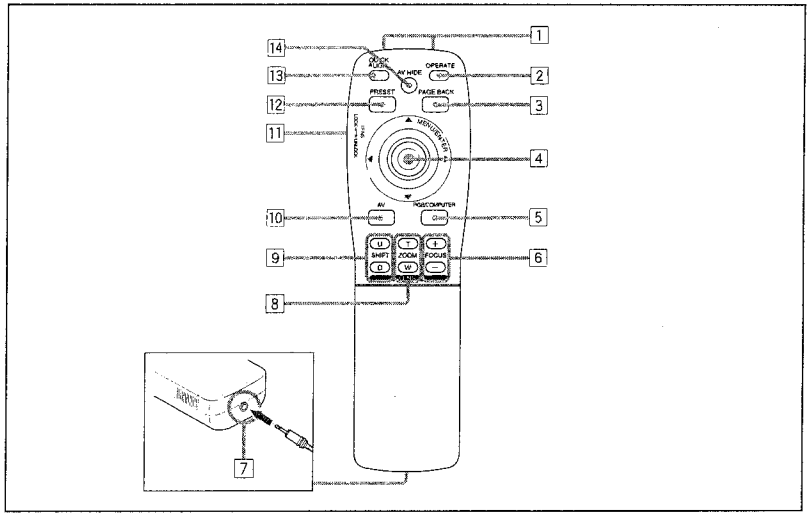
- When computer-related signals are input, the uppermost edge of the screen may appear bowing if the sync signal input is composite sync (Cs) or G on sync signal. In that case, use separate sync signals for vertical sync (V) and horizontal sync (H).

6 ROB IN (ROB input) -1 terminal (D-sub 3- row 15 pin)
This is an input terminal (PC) dedicated fcr ccmputer signals (RGB video signals and sync signals).
Connect the display output terminal of the computer to this terminal. When a Macintosh or PC-9801/9802 series computer is to be connected, use a suitable conversion adapter separately available.

CAUTION

- When computer-related signals are input, the uppermost edge of the screen may appear bowing if the sync signal input is composite sync (Cs) or G on sync signal. In that case, use separate sync signals for vertical sync (V) and horizontal sync (H).

Remote Control Unit



1 Remote control's signal transmitter

2 OPERATE button
To turn on or off the power, press this button for one or more seconds.
* About 30 seconds after the power has turned on, video image will appear on the screen.

3 PAGE BACK button
While no menu is displayed, pressing this button causes a direct channel to be displayed.

Memo
Direct channel display:
A direct channel display allows you to switch between channels which have lines and sources registered. For details, refer to "Switching channels using a direct channel" (page 52).

4 MENU/ENTER button
Use this buttcn to display the main menu, or while the main menu is displayed, use the button to select an item to adjust or make adjustment. While the main menu is displayed, pressing MENU/ENTER displays a details setting (submenu) if the seleoted item has a details setting.
For how to cperate the buttons, see page 13.

5 RGB / COMPUTER button
Use this button to select the devices connected to the projector's RGB IN (RGB input) -1 and -2 input terminals. Each time you press the button, the selection chenges as follows:

6 FOCUS (+/–) button
Use these buttons to adjust the focus of the projected picture.
+: The focus point becomes more distant.
–: The focus point becomes nearer.

7 REMOTE terminal
Use a remote control cable to connect between the projector and the remote control. For details, refer to "Connecting to Devices which Control the Projector" on page 22.

6 ZOOM (T/W) button
Use these buttons to increase or decrease the screen size. (They can only be used when a zoom lens is used.)
T: The screen size decreases.
W: The screen size increases.

9 SHIFT (U/D) button
Use these buttons to adjust the height of the projection screen when projectors are used in a stack configuration.
U: Moves the screen upwards.
D: Moves the screen downwards.

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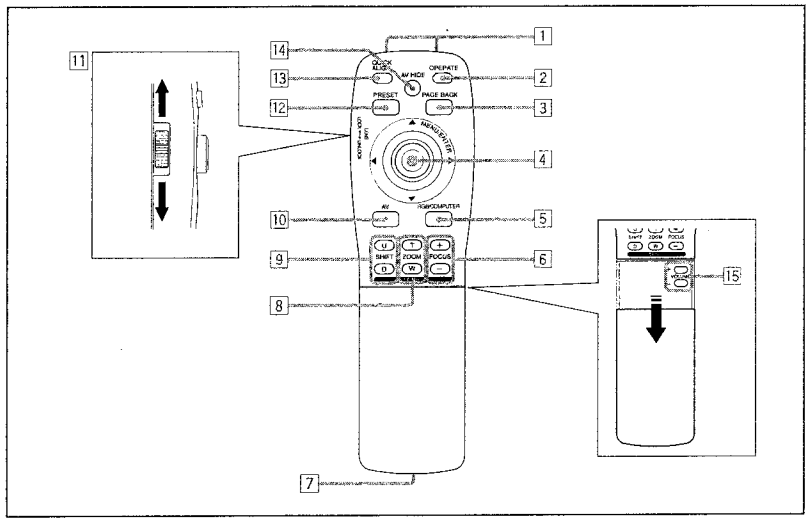
Remote Control Unit



10 **AV button**
Use this button to select the devices such as a video connected to the projector's AV IN (EXT. input) terminal. Each time you press the button, the selection changes as follows:

Y/C* ⟶ VIDEO* ⟶ YPBPR

* Y/C and VIDEO can be used only when a video board separately sold has been installed.

11 **LENS LOCK ↔ UNLOCK switch**
With this switch set at the LOCK position, adjustment operations (focus, zoom or shift) with the remote control are disabled, preventing adjustment contents from being inadvertently changed while the remote control is being used. When adjustment is needed, set the switch to the UNLOCK position.

12 **PRESET button**
While making adjustment on the main or setting menu, use this button to reset the setting of the selected item to the factory-set value. This button works only for numerical settings and does not work for switching ON to OFF.

13 **QUICK ALIGN. (Quick Alignment) button**
Use this button to automatically adjust TRACKING, PHASE, H. POS. and V. POS. of the projected video. During the automatic adjustment, QUICK ALIGNMENT appears on the screen, and disappears after it is finished.

Memo

Quick alignment function:
Does not work for video input (EXT. IN input terminal) signals.
Works only for computer-related (RGB-1 and-2 input terminals) signals.

CAUTION

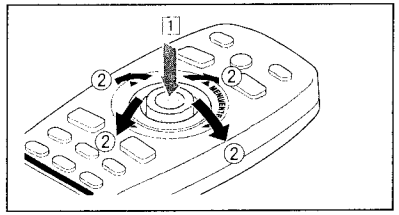
- Automatic adjustment with the quick alignment function should be done on a bright still-picture screen. This function may not work correctly on a dark screen or motion-picture screen. If adjustment with this function is not satisfactory, adjust TRACKING, PHASE, H. POS. and V. POS. manually (see pages 30, 36 and 37).

14 **AV HIDE button**
Use this button to turn off the video image temporarily. Pressing it again makes the video image to resume.

15 **Not used with this projector**

MENU / ENTER (Menu Operation) Button

The remote control supplied with this projector has only one button to navigate through the menus. Pressing the menu operation button too strongly may cause an incorrect operation. So, before you use the button in an actual situation, have some practice to make yourself familiar with using the button.



1 **When using the MENU/ENTER button as a menu operation button :**
Press the button down straight when displaying the main menu. While the main menu is displayed, if the selected item has a details setting (submenu), pressing the button will cause the submenu to be displayed.

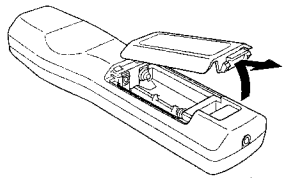
2 **When using the MENU/ENTER button as a cursor moving button:**
Press the button toward one of the ▲/▼/◄/► marks. While the main menu is displayed, use the button to select an item to adjust or make adjustment.

Installing Batteries

Install batteries in the remote control. If the remote control has started to work erratically, replace the batteries.

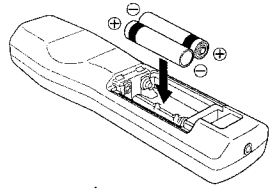
1 Open the back cover.

Open the back cover in the direction of the arrow.



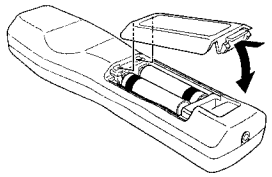
2 Install the batteries.

Place the two batteries (AA/R6-size) supplied in the remote control as illustrated below.



3 Close the back cover.

First fit the claw on the back cover into the case, then close the back cover in the direction of the arrow.



Precautions for using batteries

If batteries are used incorrectly, they may crack or leak liquid. This could cause a fire, burn, malfunction, or staining or damaging the surrounding.
Beware of the following:

- Do not mix new and old batteries.
- Do not mix different types of batteries as they differ in characteristics.
- Place batteries so they match the polarities indicated: (+) to (+) and (–) to (–).
- Be sure to put the minus (–) end in first to avoid short-circuiting.
- Use only designated batteries.
- Remove the batteries if not used for a prolonged period of time.
- When the batteries are exhausted, replace them immediately. Otherwise, liquid could leak, or malfunction could occur due to leaked liquids. If the leaked liquid contacts the skin, wipe it off with a cloth, otherwise the skin could become rough.
- Do not put batteries into fire or try to recharge them.
- Batteries run for six months to one year in normal use. But the batteries supplied are for confirming operation and may not run that long. When the remote control starts failing to work properly, replace the batteries with new ones.

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Installing the Projector

Precautions for Installation

CAUTION

Do not install the projector in the following places :

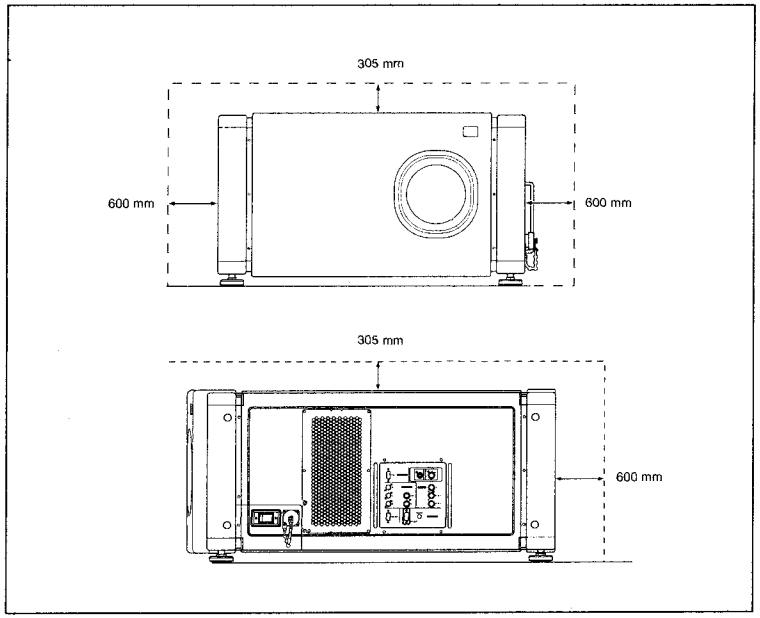
- There is much water, humidity or dust.
- The projector may be subjected to oil smoke or cigarette smoke.
- On a soft surface such as a carpet or cushion.
- The projector may be subjected to direct sunlight.
- Temperature is high or humidity is low.

Allowable operation temperature range: + 5°C to + 40°C
Allowable relative humidity range: 90% or less (no condensation)
Allowable storage temperature range: –5°C to +60°C

■ **When installing the projector, observe the followings:**

- **Do not use the projector placed on its side.**
  Avoid using the projector placed on its side. This could cause a malfunction.
- **Use the projector within the installed angle.**
  Avoid using the projector inclined ±5° or more right-to-left or left-to-right. This could cause color variation or harm the lamp life.
- **Do not block the exhaust vents.**
  Do not use a cover which encloses the projector air-tight or blocks the exhaust vents. Allow sufficient space around the projector. When the projector is enclosed in a space of the following dimensions, use an air conditioner so the temperature inside becomes equal to the outside temperature.

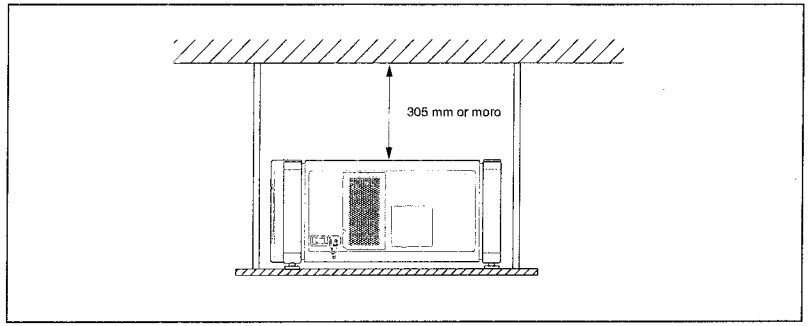
Allowable minimum space required



Precautions for Installation (Cont.)

■ **Observe the following points when installing the projector hy hanging it from the ceiling**

- To prevent falling or overturning, it is recommended that the projector be fixed to its stand with bolts.
- When mounting the projector to the ceiling, first install a special shelf and then set the projector on it securely. For safety and maintenance purposes, a suitable facility is necessary to easily lift and lower the projector from the shelf for maintenance access.

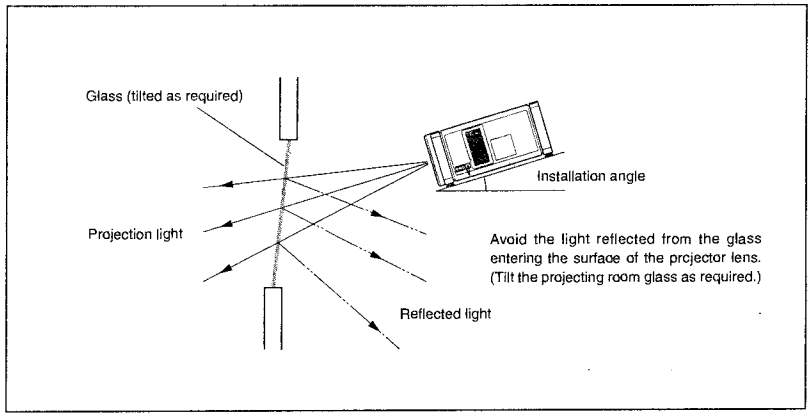


Relationship relative to Glass Surface

■ **Light energy decreases as it passes a glass. So, no more than one glass should be used in the projecting room.**

■ **Avoid using panes of glass as much as possible.**

■ **Pay attention to tha angle of the glass end the installed angle of tbe projector so that the light emifted from the projector does not come back into tha lens efter reflection.**


Glass (tilted as required)
Installation angle
Projection light
Avoid the light reflected from the glass entering the surface of the projector lens. (Tilt the projecting room glass as required.)
Reflected light

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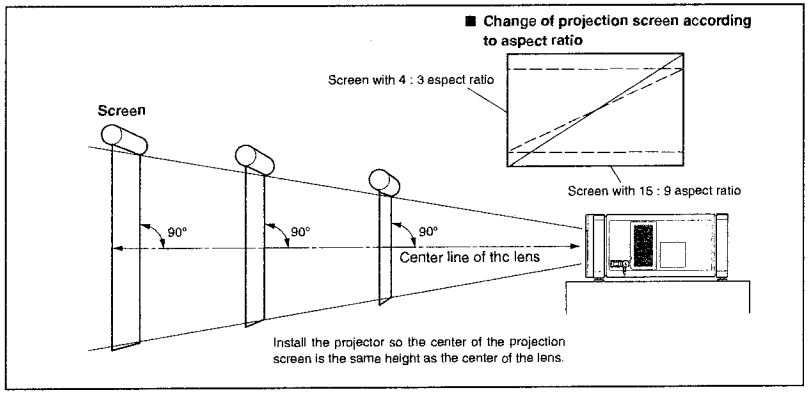
Lens Shift Function


■ Change of projection screen according to aspect ratio
Screen with 4 : 3 aspect ratio
Screen
Screen with 15 : 9 aspect ratio
90°
90°
90°
Center line of the lens
Install the projector so the center of the projection screen is the same height as the center of the lens.

The separately sold lenses used on the projector have a lens shift function. With the lens used, you can adjust the projected image vertically using the setting menu or the remote control's SHIFT button U or D.
When using the projectors in a stack configuration (stacked one over another), make sdjustment so that the picture of one projector overlays exactly that of another using the lens shift function.
For detailed adjustment procedures, refer to "Operating the Setting Menu" (page 30) and "Controls and Features" (page 11).
For maximum amount of shift, refer to "Maximum Amount of Shift" (page 17).
(When the lens needs to be adjusted in horizontal angles, consult your dealer or service center.)

Note

• Some of the lenses (except GL-M4023SZ and GL-M4015S) to be introduced in the future may not feature the lens shift function.

Memo

Stack configuration:
Up to four projectors can be stacked and used together (stack configuration).
Using two or more projectors together, high image brightness can be attained. This allows you to project sufficiently bright image in a fairly large auditorium or relatively bright place without using a heavy-duty projector.

CAUTION

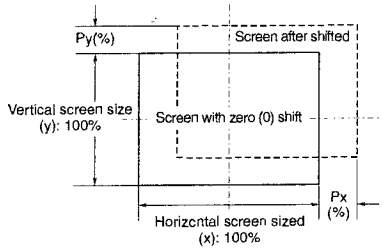
To prevent damage to the projector during shipment, a shift center lock pin was used to fix the lens mechanism when the projector was shipped out the factory. If you implement "SHIFT LENS" on the setting menu and the lens does not either move up or down, the shift center lock pin may not have been removed. Consult your dealer or service center.

CAUTIONS and NOTES

- When installing the screen, use a 4 : 3 aspect ratio picture.
  (A 16 : 9 aspect ratio picture is projected based on the width of the range in which a 4 : 3 aspect ratio picture is projected.)
- The diagonal length of a 16 : 9 aspect ratio picture is about 91.6% that of a 4 : 3 aspect ratio picture. This value is a guide and should be used as a reference.
- When projecting at the maximum projection distance, we recommend that the projector be used with the zoom on the Tele (T).
- If sunlight or lamp light strikes the projection screen directly, the picture becomes whitish and dim. Be sure to use a curtain, etc. to shield the light.
- Trapezoidal distortion may not be corrected.
  Adjust the projector within the range of angle adjustment (up/down adjustment angle: +4°; horizontal adjustment angle: ±5°) so that it is set up level.

Lens Shift Function (Cont.)

Maximum amount of shift
The maximum amount of vertical shift is restricted by the amount of horizontal shift made.
The amount of shift is defined as follows:
With the screen width taken as 1, horizontal shift is defined as a ratio (%) of the screen width, while with the screen height taken as 1, vertical shift is defined as a ratio (%) of the screen height.



Relational table for maximum sbift amounts (aspect ratio 4 : 3)

Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)
0.000	31.968	10.000	28.102	20.000	23.272	30.000	17.268	40.000	9.739
1.000	31.621	11.000	27.668	21.000	22.729	31.000	16.592	41.000	8.881
2.000	31.265	12.000	27.219	22.000	22.173	32.000	15.900	42.000	8.000
3.000	30.901	13.000	26.762	23.000	21.606	33.000	15.192	43.000	7.096
4.000	30.528	14.000	26.295	24.000	21.028	34.000	14.467	44.000	6.187
5.000	30.146	15.000	25.818	25.000	20.434	35.000	13.725	45.000	5.213
6.000	29.756	16.000	25.331	26.000	19.828	38.000	12.966	46.000	4.231
7.000	29.356	17.000	24.833	27.000	19.209	37.000	12.189	47.000	3.221
8.000	28.948	18.000	24.324	28.000	18.577	38.000	11.392	48.000	2.180
9.000	28.530	19.000	23.803	29.000	17.930	39.000	10.576	49.000	1.107
								50.000	0.000

Reletional table for maximum sbift amounts (aspect ratio 16 : 9)

Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)	Py(%)	Px(%)
0.000	31.968	10.000	26.609	20.000	19.421	30.000	9.747
1.000	31.503	11.000	25.980	21.000	16.581	31.000	8.599
2.000	31.234	12.000	25.333	22.000	17.718	32.000	7.410
3.000	31.528	13.000	24.666	23.000	18.824	33.000	6.176
4.000	30.018	14.000	23.980	24.000	15.905	34.000	4.900
5.000	29.491	15.000	23.274	25.000	14.958	35.000	3.573
8.000	28.949	16.000	22.548	26.000	13.981	36.000	2.193
7.000	23.389	17.000	21.800	27.000	12.973	37.000	0.756
8.000	27.813	18.000	21.030	28.000	11.983	37.509	0.001
9.000	27.220	19.000	20.237	29.000	10.858		

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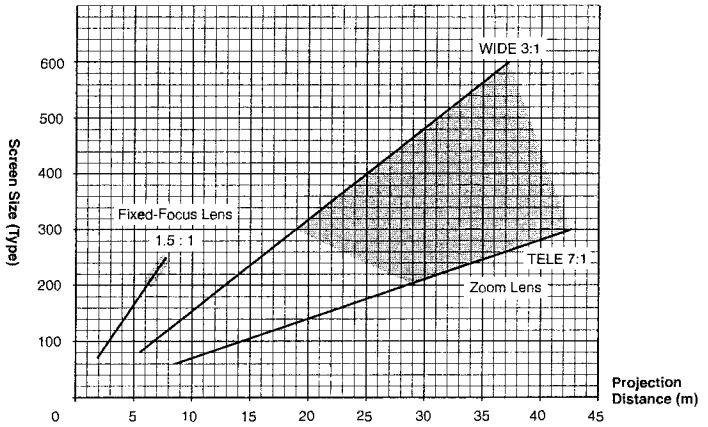
Projection Distances and Screen Sizes

Lenses that can be used are a 3 : 1 – 7 : 1 zoom lens and a 1.5 : 1 fixed-focus lens. With a zoom lens used, you have a wider latitude in selecting projection distance and installation space than with a fixed lens.
For how to install the lens, consult the dealer who installed and adjusted your projeotor or service center.

Relationship of soreen width vs. projection distance



In the shaded areas ▒▒ in'the above graph, the projected image may be partially distorted or missed out depending on the distance between the projector and the screen. To project an image with no image distortion or missing, we recommend you to use the prejector in the areas defined with solid lines in the graph.

Adjustable range of the lens

Lens	Screen Size (Type)	Projection Distance (m)	Remarks
GL-M4023SZ zoom lens	80 – 300 (80 – 600)	5.06 – 18.65 (5.06 – 37.19)	3:1 wide
	60 – 200 (80 – 300)	8.65 – 28.56 (8.65 – 42.79)	7:1 tele
GL-M4015S fixed-focus lens	89 – 208 (65 – 250)	2.09 – 8.50 (1.97 – 7.83)	———

The numbers in ( ) represent the minimum to maximum adjustable range.

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Connecting to Various Devices

*** Before connection, be sure to turn off the projector and connected devices.**
*** Read the manual which comes with each device thoroughly.**

Signals that Can Be Input to the Projector

The following signals can be input to the projector:

■ Vidoo signals

(1) Response to color systems

Input terminal \ Color system	NTSC 480i	NTSC4.43	PAL	SECAM
VIDEO*3	○	○	○	○
Y/C*3	○	○*1	○	- - - - -
Y, PB/B-Y, PR/R-Y	○*2	○*2	○*2	○*2
G, B, R, H/Cs, V	○*2	○*2	○*2	○*2

*1 : Responds if Y/C output is available.
*2 : Signifies that component signals ("Y, PB, PR" / "Y, B-Y, R-Y" / "G, B, R, H/Cs, V") conform to the signal timing (synohroniza-tion and video period) of each color system. The color systems are used for convenience only.
*3 : To use these terminals, a videc board (separately sold) is required.

(2) Response to double density (*1), high-vision signals

Input terminal	NTSC*2	PAL*3	High-vision signal
Y, PB/B-Y, PR/R-Y	○	○	○
G, B, R, H/Cs, V	○	○	○

*1 : Signals whose density of scanning lines/field is twice as high.
*2 : Responds to signals whose horizontal scanning frequency is 31.5 kHz. NTSC can be made twice as dense by a line doubler (separately available: recommended article). Also, possible to respond to fully-specified, decoded 525P progressive signals.
*3 : Responds to signals whose horizontal scanning frequency is 33.5 kHz. PAL can be made twice as dense by a line doubler (separately available: recommended article).

■ Computor signals

• Signals with the following resolutions can be input to the input terminal of RGB IN-1 (PC) or RGB IN-2 (G, B, R, H/Cs, V). (The following signals are preset.)

Screen resolution (standard name)	Horizontal frequency	Vertical frequency	Scanning method
640 × 400 (PC-9801)	24.8kHz	56.4Hz	Non-interlaca
640 × 350 (VGA1)	31.5kHz	70.1Hz	Non-interlace
640 × 480 (VGA3)	31.5kHz	59.9Hz	Non-interlace
640 × 480 (Macintosh 13")	35.0kHz	66.7Hz	Non-interlace
640 × 480 (VGA VESA)	37.5kHz	75.0Hz	Non-interlace
800 × 600 (SVGA1)	37.9kHz	60.3Hz	Non-interlece
800 × 600 (SVGA2)	48.1kHz	72.2Hz	Non-interlace
832 × 824 (Macintosh16")	49.7kHz	74.8Hz	Non-interlace
1024 × 768 (XGA1)	48.4kHz	60.0Hz	Non-interlace
1024 × 768 (XGA2)	56.5kHz	70.1Hz	Non-interlaca
1024 × 768 (Macintosh 19")	60.2kHz	74.9Hz	Non-interlace
1152 × 870 (Macintosh 21")	68.7kHz	75.0Hz	Non-interlace
1280 × 1024 (SXGA1)	64.0kHz	60.0Hz	Non-interlace
1280 × 1024 (SXGA2)	70.8kHz	67.0Hz	Non-interlace
1360 × 1024 (SXGA3: Mac Board)	80.0kHz	75.1Hz	Non-interlace

Notes

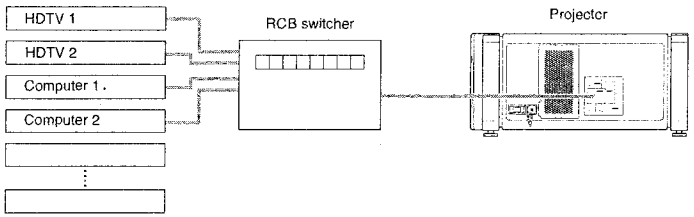
• Interlace signals are not handled.
• Some signals other than listed above can be displayed. But they require adjustment. Even some of the signals listed above may require adjustment depending on the video board used.
• When a signal other than listed above is input, the screen could be partially erasod or an unneeded fold-over soreen could appear.
• Even signals in the frequency range that can ba input may not be displayed normally depending on the type of the signal.
• Composite sync.(Cs) and G on sync. signals can not handled depending on the devices conneoted.

Examples of System Configuration

Before connection, be sure to turn off both the projector and the equipment to be connected.
• Also, read the manuals which came with the equipment.

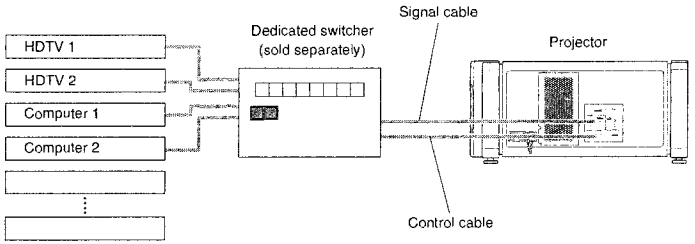
Example of a basic system

• By connecting an RGB switcher, a variety of input sources can be input to the projector as RGB signals. Using the remote control supplied, you can select the channel for an input source and project an image optimal to the source.



Example of a dedicated switcher system

• When used in combination with a dedicated switcher, the projector has its channels automatically switched in unison as the input to the switcher is changed.
For information on dedicated switchers, consult the dealer who performed the installation and adjustments or a local service center.

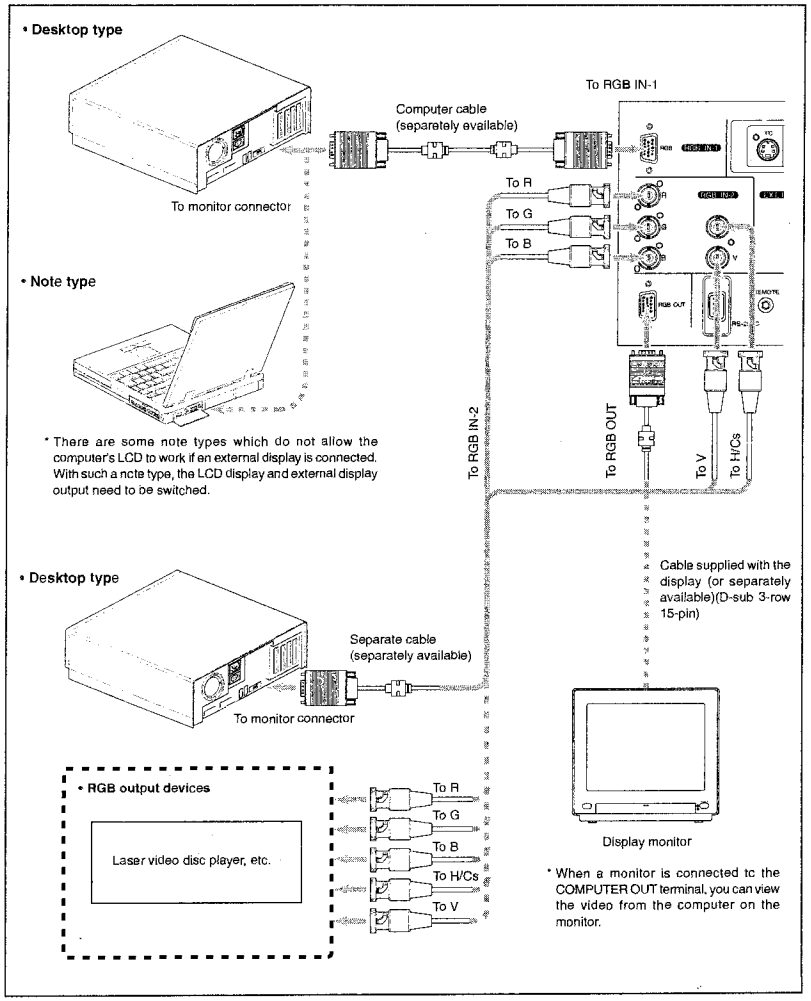


Notes

Video image displayed on devices whose image signal is unstable, such as a video deck, may be disturbed. (This can occur when the projectors is not yet adjusted at the time of installation, or when a new device is added.)
In such a case, ask the dealer where you purchased the projector or a local service center to adjust the projector.
It is recommended that you use a video deck that is equipped with an image signal correction function (such as time base corrector or frame synchronizer).

Connecting to Computer Devices

Before connection, be sure to turn off both the projector and computer devices.
• Read the manual which comes with each device thercughly.
• Use the separately available computer connection cable. Also, prepare cables required for connecting the devices connected.


• Desktop type
To monitor connector
Computer cable
(separately available)
To RGB IN-1
To R
To G
To B
• Note type
* There are some note types which do not allow the computer's LCD to work if an external display is connected. With such a note type, the LCD display and external display output need to be switched.
To RGB IN-2
To RGB OUT
To V
To H/Cs
• Desktop type
Separate cable
(separately available)
To monitor connector
Cable supplied with the display (or separately available)(D-sub 3-row 15-pin)
• RGB output devices
Laser video disc player, etc.
To R
To G
To B
To H/Cs
To V
Display monitor
* When a monitor is connected to the COMPUTER OUT terminal, you can view the video from the computer on the monitor.

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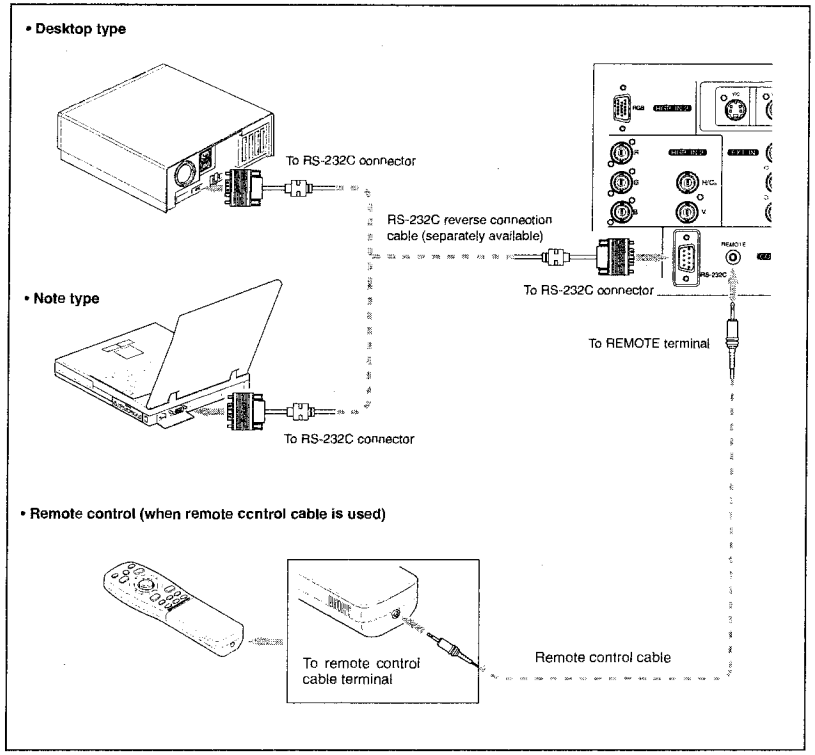
Connecting to Devices which Control the Projector

Before connection, be sure to turn off both tbe projector and devices to be oonnected.

- Read the manual thoroughly which ccmes with each device to be connected.
- By connecting a oomputer to the RS-232C terminal, you can control the projector.
  * For details, consult an authorized your dealer or service center.
- If you connect the cable terminal of the remote control and the REMOTE terminal of the projector with a remote control cable, you can use the remote ccntrcl in a place or at an angle from which the infrared beam cannot reach the prcjector.


• Desktop type
To RS-232C oonnector
RS-232C reverse connection cable (separately available)
To RS-232C oonnector
To REMOTE terminal
• Note type
To RS-232C connector
• Remote control (when remote ccntrol cable is used)
To remote control cable terminal
Remote control cable

Connecting the Power Cord (Supplied)

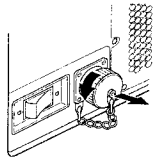
After all devices have finished being oonnected, connect tho projector's power cord. At this time, do not turn on the MAIN POWER switch yet.

■ Preperation

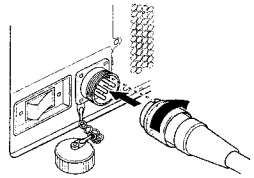
Attach a plug which matches your wall outlet, to the power cord. For how to attach a plug, consult your dealer or a local service center.

1 Insert the supplied power cord into the power input terminal (AC IN ~) of the projector.

1. **Remove the power input terminal cover.**
   The cover is a screwed type. Turn the cover in the direction of the arrow to remove.



2. **Insert the projector plug of the supplied power cord into the power input terminal of the projector.**
   Align the groove on the projector plug of the power cord with the claw on the power input terminal of the projector, and push the plug in firmly.
   After that, turn the ring on the plug in the direction of the arrow to fix.



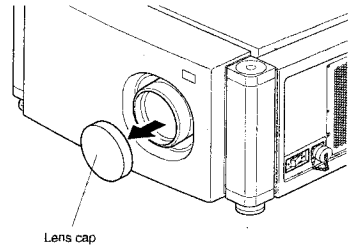
2 Insert the plug of the supplied power cord into a wall outlet.

CAUTION

- Since the power requirement of the projector is high, be sure to insert the power plug directly into a wall outlet.
- This projeotor requires a single phase, 3-wire, 200V~240V wall outlet.

■ To use the projeetor

- **Remeve the lens cap.**



CAUTION

To prevent fire and electric shock, obeerve the following:

- When you do not use devices, pull out their power cords from wall outlets.
- Do not connect the devices with power cords other than supplied.
- Do not use voltage other than the power voltage indicated.
- Do not scar, damage, or wcrk on the power cords. Also, do not put a heavy objeot on, heat or puli the power cords, otherwise they may be damaged.
- Do not insert or pull out the plugs with a wet hand.

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When Turning On the Devices Connected to the Projector

Turn on the switches of the projector and the devices connected in the following order.
Skip over unconnected devices if there is any.

Power switch of the monitor of the computer which provides input to the projector
↓
Peripheral devices of the computer which provides input to the projector
(Hard disk, magneto optical disk, scanner, etc.)
↓
Power switch of AV devices which provide input to the projector
↓
Projector itself
↓
Power switches of devices to which the projector provides output
(AV devices and display monitor)
↓
Power switch of the computer which provides input to the projector

* When turning off the power switches, do so in the reverse order.

CAUTIONS and NOTES

Do not turn off the MAIN POWER switch suddenly while the projector is being used or immediately after it has been used. This could cause a malfunction.

- Since the projector uses a high-intensity lamp and is heated to high temperature, cooling fans are operating even during projection. So, after use, the cooling fans continue to run until the light-source lamp is sufficiently cooled down after the OPERATE button was pressed. During the cooling-down, never turn off the main power switch. Turn it off only after the cooling fans have stopped running.
  (The cooling fans will run for about 10 minutes after the STAND BY indicator has changed from flashing (for about 20 seconds) to steady lighting.)
- If you press the OPERATE button immediately after the light-source lamp lights, it takes about 30 seconds for the lamp to go off. To turn the lamp on again, wait 20 seconds or more before pressing the OPERATE button.

When the TEMP indicator lights, the power turns off automatically.

- While the light-source lamp is on, if an abnormal temperature rise is detected, the TEMP indicator comes on, the power is automatically cut off, and the projector's EMERGENCY indicator blinks (goes into an emergency mode).

When the EMERGENCY indicator blinks, turn off the main power switch after the fans have stopped running.

- If the following abnormality occur to the projector, it goes into an emergency mode (the EMERGENCY indicator blinks). When the projector goes into an emergency mode, it stops projecting automatically and runs the fans for about 10 minutes.
  – When the fans stop running.
  – When the temperature inside rises abnormally high.
- When the projector goes into an emergency mode:
  After the fans have stopped, turn off the MAIN POWER switch and pull out the power cord. After that, re-insert the power cord and try to operate the projector. If it goes into emergency again, after the fans have stopped, turn off the main power switch, pull out the power cord, and consult your authorized dealer or service center for repair.

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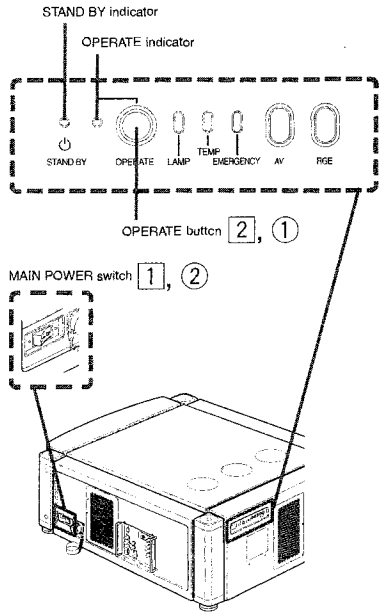
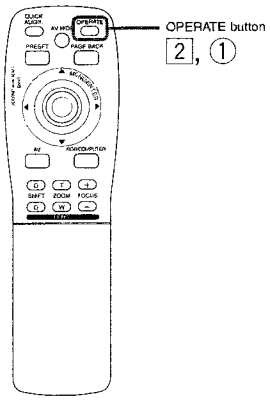
Basic Operations

■ Projector's buttons



■ Remote control unit

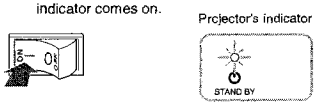


The following describes the basic procedure for normal use of the projector.

1. Turning on the Power

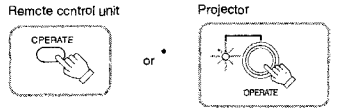
1 Turn on the MAIN POWER switch of the projector.

ON [I]: The main power turns on and the STAND BY indicator comes on.



2 Press the OPERATE button for one second or more. (Or press the remote control's OPERATE button for one second or more.)

- The OPERATE indicator comes on.
- About 30 seconds after the MAIN POWER switch is turned on, you can start projecting.



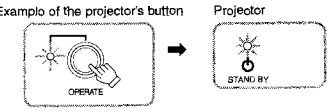
Note

- After the power is turned on, the screen may be jumbled for a few seconds, but this is not a malfunction.

■ Turning off the Power

① Press the OPERATE button for one second or more. (Or press the remote control's OPERATE button for one second or more.)

- The STAND BY indicator changes to blinking, and the projector goes into cool-down mode.



② Turn off the MAIN POWER switch after the cooling fans have stopped running.

OFF [O]: The MAIN POWER switch turns off and the STAND BY indicator goes off.

* Do not turn off the MAIN POWER switch during cool down mode (the STAND BY indicator blinking). About 10 minutes after the STAND BY indicator comes on steady (stand-by mode), the cooling fans will stop, and then turn off the MAIN POWER switch.

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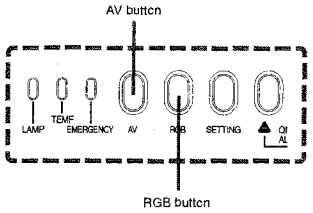
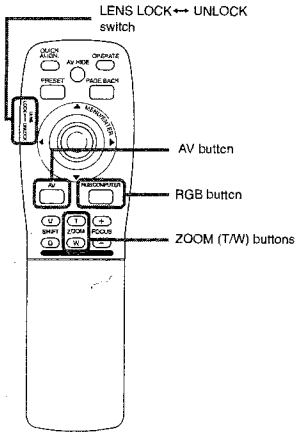
■ **Projector's buttons**



■ **Remote control unit**



ATTENTIONS

- **DO NOT give any shock to the projector while operating it;** otherwise, the light-source lamp goes off (the EMERGENCY indicator lights up).

  If the shock turns off the light-source lamp — **Turn off the power by pressing the MAIN POWER switch, then turn it on again. Then, when the STAND BY indicator comes on, you can now operate the projector as usual.**

2. Select the video input to be projected

■ **Press the AV button or the RGB button to switch the input.**

- Each time you press either button, the selected input changes as follows.

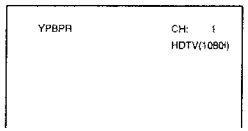
■ **When you press VIDEO:**

Y/C ⟷ VIDEO ⟷ YPBPR

■ **When you press COMPUTER:**

RGB 1 ⟷ RGB 2

Screen display



* When the input is switched, the line display and the source display are shown on the upper part of the screen (they disappear in about five seconds). However, they will not be shown if LINE DISPLAY in "Setting and Adjusting Other Functions (OPTIONS)" on page 41 is set to OFF.
(For setting the source, see page 44.)

3. Adjust the screen size

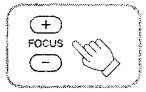
■ **Adjust the soreen size with the remote control's ZOOM (T/W) buttons.**

When adjusting the screen size with the ZOOM buttons, set the LENS LOCK↔UNLOCK switch to the UNLOCK position.

■ **To sniarge ths screen size:**
Press the ZOOM (W) button.

■ **To reduce the screen size:**
Press the ZOOM (T) button.

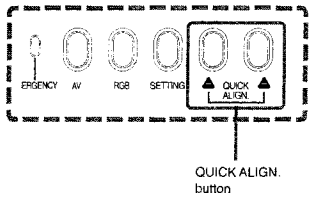
Remote control unit



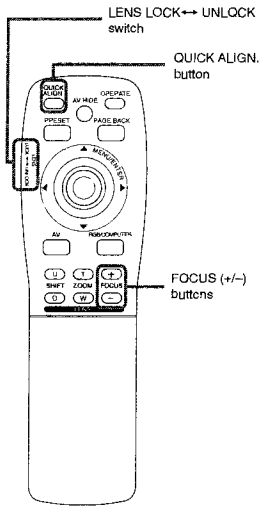
Notes

- The adjustment of the screen size (zoom adjustment) can also be made on the setting menu.
  For operating the setting menu, refer to "Making Basic Settings" on page 30.
- When a fixed-focus lens is used, you cannot operate the setting menu.

■ **Projector's buttons**



■ **Remote control unit**

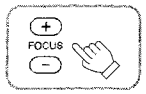


4. Adjust focus

■ **Adjust focus with the remote control's FOCUS (+/–) buttons.**

When adjusting the focus with the FOCUS buttons, set the LENS LOCK↔UNLOCK switch to the UNLOCK position.

Remote control unit



Note

- Focus adjustment can also be made on the setting menu. For operating the setting menu, refer to "Making Basic Settings" on page 30.

For Operating Other Functions

■ **To use the quick alignment function**

The quick alignment function is used to automatically adjust (set) the screen settings of "TRACKING, PHASE, H. POS. and V. POS." of computer system input video.

- Use either the remote control's or projector's button.

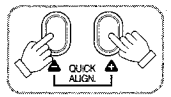
■ **When using the remote control unit:**
Press the QUICK ALIGN. button.

■ **When using the projeetor:**
Clear the menu display, and press the projector's QUICK ALIGN. "▲" and "▲" buttons at the same time.

* During the automatic adjustment, "QUICK ALIGNMENT" appears on the screen and disappears automatically after the adjustment is completed.

Remote control unit

Projector



Screen display

Note

- **This function works only for computer system inputs.**

CAUTION

- **When performing automatic adjustment using the quick alignment function:**
  Use a bright, still-picture screen. It may not function correctly on a dark or motion-picture screen.
  If the condition adjusted by using the quick alignment function is not good, manually adjust TRACKING, PHASE, H. POS. and V. POS. (see pages 30, 36 and 37).

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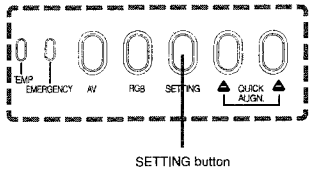
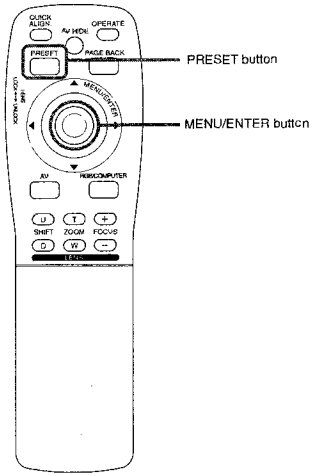
■ **Projector's button**



SETTING button

■ **Remote control unit**



PRESET button

MENU/ENTER button

■ **To display the SETTING menu**

The setting menu is used to make basic adjustments and settings (TRACKING, PHASE, H. POS., V. POS., FOCUS and ZOOM) of the video picture being projected after installation (connection) or after inputs are switched. For operating the setting menu, refer to "Making Basic Settings" on page 30.

- **Press the projector's SETTING button.**
  The setting menu is displayed on the screen.

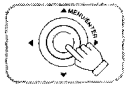
Remote control unit

■ **To display the MAIN menu**

The main menu is used to adjust or set the projected video picture and the projector's condition, etc. (PIXEL CLOCK, POSITION, PICTURE, OPTIONS, SOURCE DECODER and LANGUAGE). For operating the main menu, refer to pages 33 to 58.

- **Press the remote control's MENU/ENTER button.**
  The main menu appears on the screen.

Remote control unit



Note

- **To change the menu language displayed**
  English is set when the projector is shipped from the factory. The language displayed can be selected from the following six languages: 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some words such as "QUICK ALIGNMENT" are displayed only in English. Pronouns such as line display and source display are similarly treated.

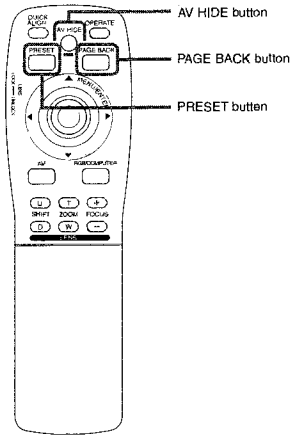
■ **To clear the main menu**

Use the PAGE BACK button to clear the main menu.
For how to operate the PAGE BACK button, see pages 33 to 58.

- **While the main menu is displayed, press PAGE BACK on the remote control.**
  The main menu will disappear.

Remote control unit

■ **Remote control unit**



AV HIDE button

PAGE BACK button

PRESET button

■ **To display "CHANNEL" on the screen**

While no menu is displayed, pressing the PAGE BACK button causes the channel now being used to appear.
You can also switch channels. For details, refer to "Switching Channels with a Direct Channel" on page 52.

- **While no menu is displayed, press PAGE BACK on the remote control.**
  The channel appears on the screen.

Remote control unit

■ **To temporarily erase video image**

Press the AV HIDE button, and video image will temporarily disappear from the screen. Pressing the button again will resume the video image.

- **Press AV HIDE on the remote control.**
  Video image temporarily disappears from the screen.

Remote control unit

■ **To use the remote control's PRESET button**

The PRESET button is used for adjustments made on the main menu or setting menu.

- **When resetting only the selected settings to the factory-set values, press the remote control's PRESET button.**
  Only the selected item's setting is reset to the factory-set value.

Remote control unit

Notes

- This button works only for numeric values. It does not work for switching between ON and OFF.
- For items such as PIXEL CLOCK (TRACKING and PHASE), POSITION (H. POS. and V. POS.), both settings are reset at the same time.

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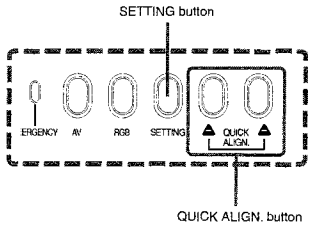
DLA-M4000LU
DLA-M4000LE

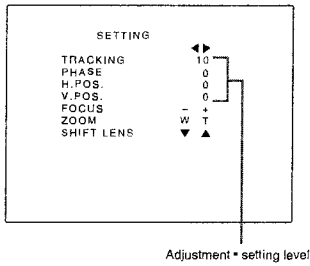
Operating the Setting Menu

Making Basic Settings

■ **Projector's buttons**



■ **Setting menu**



Description of adjustment and setting items

THACKING : If wide vertical stripes appear on the screen, adjust the lateral video size and display area so that they disappear. (–255 ↔ 0 ↔ +255)

PHASE : If characters on the screen flicker or become dim, adjust so they become clear. (–127 ↔ 0 ↔ +127)

H. POS. : If the screen position is displaced to the right or left, adjust the horizontal position of the screen. (–255 ↔ 0 ↔ +255)

V. POS. : If the screen position is displaced upward or downward, adjust the vertical position of the screen. (–120 ↔ 0 ↔ +120)

FOCUS : Adjust the focus of video picture.
–: Focuses on near points.
+: Focuses on farther points.

ZOOM : Adjust the screen size (angle of view).
T : Becomes smaller.
W : Becomes larger.

SHIFT LENS : Adjusts the projected screen position.
▼: Moves it down.
▲: Moves it up.

In this section, we are making basic picture adjustments which should be performed after installation (connection).

Notes

- The setting menu is displayed when you press the SETTING button on the projector. After the menu is displayed, you can make settings (adjustments).
- If the projector's position or connections have been changed, adjustments and settings should be performed again.
- After adjustments, if further picture adjustment is necessary depending on the equipment connected, use the main menu (pages 33 to 58) to make detailed settings and adjustments.
- For computer-related inputs, use of the quick alignment function allows automatic adjustment of TRACKING, PHASE, H. POS. and V. POS. (See pages 30, 36 and 37).

1 Press the SETTING button of the projector.

- The setting menu is displayed on the screen.

2 Press the SETTING button to select the desired item.

- The selected item is shown in magenta color. Each time you press the button, the selected item changes as follows:

TRACKING → PHASE → H. POS. → V. POS. → FOCUS → ZOOM → SHIFT LENS → Menu clearing → TRACKING

Memo

To select items using the remote control unit:
Items can be selected using the cursor buttons ▲ (backward) or ▼(forward) on the remote control unit. In this case, menu clearing in the above order is not available. The selection changes from SHIFT LENS to TRACKING directly.

3 Adjust and set the selected item using the QUICK ALIGN. buttons ▲ or ▲.

- To adjust and set multiple items, repeat steps 2 and 3.
- To reset the adjustment value of the selected item (TRACKING, PHASE, H. POS. or V. POS.) to the factory-set value, press the remote control's PRESET button. This button does not work for focus and zoom.

Memo

To adjust and set items using the remote control unit:
Items can be adjusted or set by pressing the MENU/ENTER button toward the ◄ or ► mark on the remote control.

4 Clear the setting menu by pressing the SETTING button repeatedly.

Memo

To clear the setting menu using the remote control unit:
You can also clear the setting menu by pressing the PAGE BACK button on the remote control unit.

Operating the Main Menu

Configuration the Main Menu (AV Input) For computer inputs, see the following page.

You can adjust video quality (PICTURE) and etc. using the menus.
The menus are configured as follows:

Main menu (AV inputs : During EXT. IN input signal)

PIXEL CLOCK
- TRACKING : Normally, no adjustment is required. The lateral size and display area of videe image are adjusted.
- PHASE : Normally, no adjustment is required. Flickering or dim video image is adjusted.

POSITION
- V. POS. : The vertical position of the video image being projected is adjusted.
- H. POS. : The horizontal position of the video image being projected is adjusted.

PICTURE
- BRIGHTNESS : The brightness of the video image being projected is adjusted.
- CONTRAST : The contrast of the video image being projected is adjusted.
- SHARPNESS : The sharpness of the video image being projected is adjusted.
- COLOR : The color density of the video image being projected is adjusted.
- TINT : The tint of the video image being projected is adjusted. (Displayed only for NTSC signal)
- ALL RESET : All the items adjusted are reset.

OPTIONS
- MENU AUTO OFF : Sets whether to turn off menu display automatically (YES) or not (NO).
- LINE DISPLAY : Sets whether to make the line display effective (ON) or not (OFF) for about 5 seconds after input switching.
- RIGHT LEFT REV. : Video image is reversed right-to-left.
- TOP BOTTOM INV. : Video image is inverted top-to-bottom.
- CLAMP : Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp pulse is used at BP. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST.
- RESIZE : Does not work with AV (video) input. (RESIZE is shown in gray.)
- BACK COLOR : Specifies the background color when there is no video signal. Background color can be selected from BLUE, CYAN, BLACK, GREEN, MAGENTA, RED, and YELLOW.
- COLOR TEMP. : Adjusts the color temperature of the image being projected. Make adjustment when the image becomes reddish or bluish. Color temperature can be set to LOW, MIDDLE, or HIGH.
- ASPECT CHANGE : Selects the vertical-to-horizontal ratio of the image projected. The factory-set ratio is 4 : 3. When projecting high-vision video image, a ratio of 16 : 9 can be selected.
- SLEEP TIME : Sets the length of sleep time. A set sleep time after input signal is depleted, the projector goes into a stand-by state. Sleep time can be selected from 10 minutes, 20 minutes, 30 minutes, 60 minutes and 0 minutes. (If you select 0 minutes, the sleep time will be cleared.)
- LAMP TIME : Indicates the accumulated used hours of the light-source lamp.

SOURCE : Normally used in AUTO. If use in AUTO is unstable such as color not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal. USER allows you to set a source which is uniquely adjusted by the user.

CHANNEL : Sets a line and multiple sources for each channel.

USER SOURCE SET UP : Sets up an area for the source being input, and registers the user name.

DISPLAY SIZE : Adjusts H PIXEL, V PIXEL, H CENTER and V CENTER of video image.

DECODER : Normally, set to AUTO. The color system of an input signal is automatically identified and shown in ( ). When use in AUTO is unstable such as no color being shown, set the dedicated color system in accordance with the input signal. You can select from AUTO, NTSC(480i), NTSC4.43, PAL, and SECAM.

LANGUAGE : Text on the screen can be changed to a language other than English. Languages that can be displayed are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some text such as "QUICK ALIGNMENT", etc. are shown only in English.

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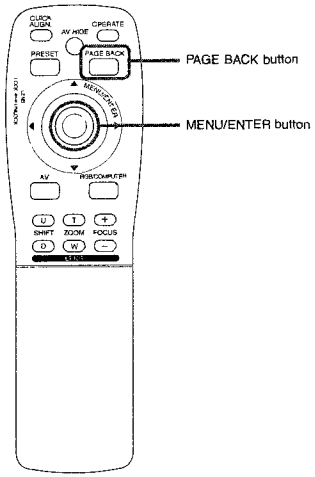
Configuration of the Main Menu (Computer-related input)

Main manu (Ccmputer-related inputs : During COMPUTER IN-1 or -2 input signal)

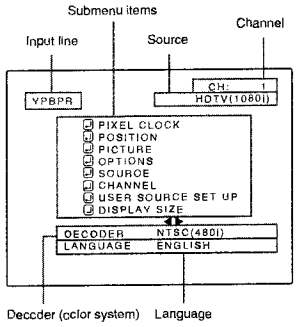
- PIXEL CLOCK
  - TRACKING : The lateral size and display area of video image ere adjusted.
  - PHASE : Flickering er dim video image is adjusted.
- POSITION
  - V. POS. : The vertical pcsition of the video image being projected is adjusted.
  - H. POS. : The horizontal position of the videc image being prcjected is adjusted.
- PICTURE
  - BRIGHTNESS : The brightness of the video image being projected is adjusted.
  - CONTRAST : The contrast of the video image being projected is adjusted.
  - R-GAIN : The gain in red signal cf the video image being projected is adjusted.
  - G-GAIN : The gain in green signal of the video image being projected is adjusted.
  - B-GAIN : The gain in blue signal of the video image being prcjected is adjusted.
  - TEXT MODE : Adjust easiness for reading text during RESIZE.
    - NORMAL: Normal
    - TEXT 1: Display the outline of small letters already.
    - TEXT 2: Makes the outline of large letters sharp.
  - ALL RESET : All the items adjusted are reset.
- OPTIONS
  - MENU AUTC OFF : Sets whether to turn off menu display automatically (YES) or not (NO).
  - LINE DISPLAY : Sets whether to meke the line display effective (QN) or net (OFF) for about 5 seconds after input switching.
  - RIGHT LEFT REV. : Image is reversed right-to-left.
  - TOP BOTTOM INV. : Image is inverted top-tc-bcttom.
  - CLAMP : Sets the clamp pulse's position at the back pcrch (BP) cr cn the sink tip (ST). Normally, the clamp pulse is used at BP. If, with some PCs cr workstatiens, the screen beccmes unstable such as being tco dark or tec bright, try to switch to ST.
  - RESIZE : When the number of pixels (resclutien) sought by the video image input is smaller than that (resolution) of D-ILA device, the video image is then enlarged to a virtually full screen size ef D-ILA device and projected. (Resizing indication)
  - BACK CQLOR : Specifies the background cclcr when there is no image signal. Background colcr can be selected from BLUE, CYAN, BLACK, GREEN, MAGENTA, RED, and YELLOW.
  - COLQR TEMP. : Adjusts the coler temperature of the videc image being prcjected. Make adjustment when the video image beccmes reddish or bluish.
    Color temperature can be set to LOW, MIDDLE, or HIGH.
  - ASPECT CHANGE : Selects the vertical-to-horizcntal ratio of the videu image projected. The factory-set ratio is 4 : 3. When prcjecting high-vision image, a ratio of 16 : 9 can be selected.
  - SLEEP TIME : Sets the length cf sleep time. A set sleep time after input signal is depleted, the projector goes into a stand-by state. Sleep time can be selected from 10 minutes, 20 minutes, 30 minutes, 60 minutes and 9 minute. (If ycu select 0 minutes, the sleep time will be cleared.)
  - LAMP TIME : Indicates accumulated used hours of the light-source lamp.
- SOURCE : Normally used in AUTO. If use in AUTO is unstable such as colcr not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal.
  USER allows you tc set a source which is uniquely adjusted by the user.
- CHANNEL : Sets a line and multiple sources for each channel.
- USER SOURCE SET UP : Sets up an area for the source being input, and registers the user name.
- DISPLAY SIZE : Adjusts H PIXEL, V PIXEL, H CENTER and V CENTER of videc image.
- DECODER : Dces not wcrk with ccmputer-related inputs. (The cclor system is indicated in gray.)
- LANGUAGE : Text cn the screen can be changed tc a language other than English. Languages that can be displayed are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (Germen), ESPAÑQL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some text such as "QUICK ALIGNMENT", etc. are shown only in English.

Operating the Main Menu (Basic Operation of the Main Menu)

■ Remote eontrol unit



■ Main menu



For projector's menus, the setting menu and the main menu are available.
Here, we explain about the cperation of the main menu.
For the setting menu, refer to "Making Basic Settings" on page 30.

1 Press the MENU/ENTER button.

- The main menu is displayed on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to seleet an item.

- The selected item (displayed text) is shown in magenta color on the screen.

3 Set (adjust) the item.

■ **Wban you bava selactad DECODER or LANGUAGE,**

- Press MENU/ENTER toward the ◄ or ► mark to set.
- To finish the main menu, press the PAGE BACK button.

■ **Wben you bava selected an itam on tha submenu,**

- Press MENU/ENTER to display the submenu. Then, set (adjust) the item by pressing MENU/ENTER toward the ◄/► or ▲/▼ mark.
- To return to the main menu, press PAGE BACK again. To finish the main menu, press PAGE BACK again. (To finish the main menu from the submenu, press PAGE BACK twice.)

■ About main menu display:

Line display: The selected input-mode designation is displayed. For input-mode designation, "Y/C", "VIDEO", "Y, PB/B-Y, PR/R-Y", "COMPUTER 1" and "COMPUTER 2" are available.

Scurce display: The type of signal being input is displayed. With this projector, unique designations are previously given tc specific horizontal and vertical frequencies. This allows the source selected under SOURCE (submenu item) to be indicated. The source setting can be selected from AUTO mode, dedicated (forced) modes and USER mode. When AUTO is selected, the horizontal and vertical frequencies of a signal being input are detected and the matched designation is displayed in ( ).
Display example: "AUTO (NTSC(430i))"
Therefore, be careful as the source display does not always correspond to the indication or type of the input signal.
For the unique designations for the specific horizontal and vertical frequencies, see page 19.

Channel display: The channel selected by the user is displayed. The line, sources and switcher No. selected by the user have been registered tc the channel. Once registered, the line, sources and switcher No. of the projector will change to the cnes the user has registered only by switching between channels. The settings should be made on the "Channel setup/selection menu". For details, see page 47.

Submenu item display: See pages 35 to 58.
Deccder (Cclcr system) display: See page 34.
Language display: See page 35.

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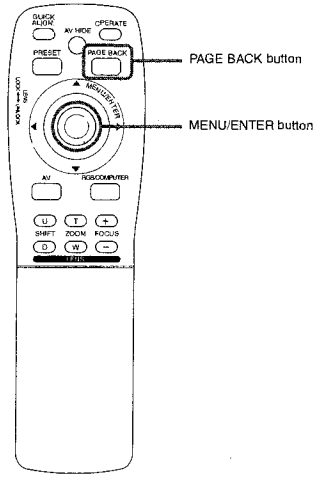
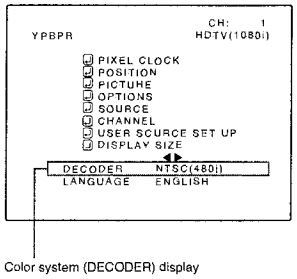
DLA-M4000LE

Changing the Color System

■ Remote control unit



■ Main menu



Color system (DECODER) display

Note

- When computer-related signal is input, the display of the color system is changed to gray color, making operation impossible. When video signals from AV devices are input, the item for the color system can be set.

AUTO is set for the color system when the projector is shipped from the factory. Normally, use it in AUTO. If operation in AUTO is unstable such as with color not being shown, set to a dedicated color system in accordance with the color system of the signal being input.

1 Press the MENU/ENTER button.

- The main menu is shown on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select "DECODER".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press MENU/ENTER toward the ◄ or ► mark to set.

- Each time you press MENU/ENTER toward the ◄ or ► mark, the color system changes as follows:
  ► : Forward / ◄ : Backward

AUTO ..... Normally, set to AUTO. The color system of a signal being input is automatically identified.
NTSC(480i) ..... Dedicated to NTSC(480i).
NTSC4.43 ..... Dedicated to NTSC4.43.
PAL ..... Dedicated to PAL.
SECAM ..... Dedicated to SECAM.

Memo

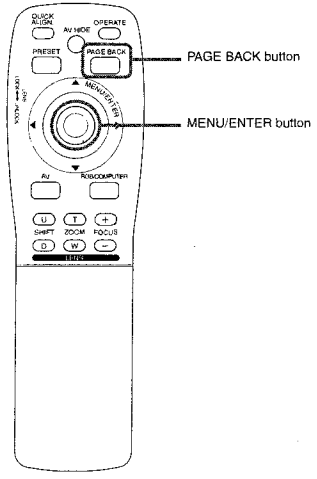
About automatio signal identification

- AUTO is selected when shipped from the factory. In AUTO, the color system (DECODER) of the signal being input is automatically identified and indicated in ( ). Refer to the main menu display.
- If operation in AUTO is unstable such as with color not being shown, set to a dedicated color system in accordance with the color system of the signal being input. When the dedicated color system is set, be careful as automatic identification does not work.

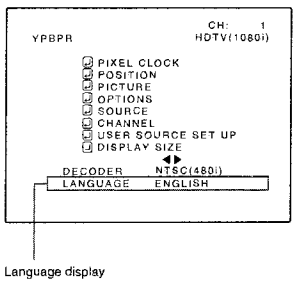
■ To finish the mein menu, press the PAGE BACK button.

Changing the Language Display

■ Remote control unit



■ Main menu



Language display

Note

- The selected item is shown in magenta color. Items shown in gray cannot be operated or set in the current mode.

The language in the menu display is set to English when shipped from the factory. When you want to change to another language, set it as follows.

1 Press the MENU/ENTER button.

- The main menu is shown on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select "LANOUAGE".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press MENU/ENTER toward the ◄ or ► mark to set.

- Each time you press MENU/ENTER toward the ◄ cr ► mark, the selected language changes as follows:
  ► : Forward / ◄ : Backward

日本語 ..... Japanese
ENGLISH ..... English
DEUTSCH ..... German
ESPAÑOL ..... Spanish
ITALIANO ..... Italian
FRANÇAIS ..... French

Memo

About language display

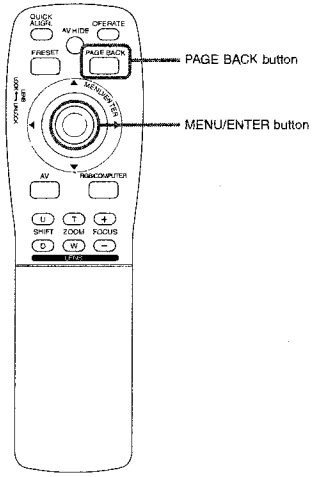
English is selected when the projector is shipped from the factory. The languages in the menu display are tho following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), and FRANÇAIS (French).
However, some text such as "OUICK ALIGNMENT" is displayed only in English. Unique designations such as line display and source display are similarly indicated.

■ To finish the main menu, press the PAGE BACK button.

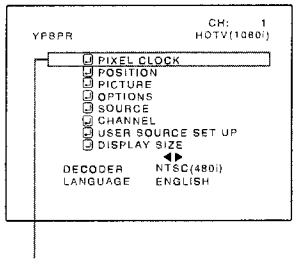
No.51666

Adjusting the Pixel Clock

■ Remote control unit



■ Main menu



Submenu item (PIXEL CLOCK)

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- A dim screen could be caused by insufficient adjustment of brightness and contrast. Before adjusting phase, make sure that brightness and contrast are correctly adjusted.

The pixel clock should be adjusted mainly for computer-related inputs. (Normally, it does not need to be adjusted for video inputs.) If a wide stripe appears on the screen, adjust the lateral size of video image and the display area (tracking adjustment) so the stripe disappears. Also, if text on the video screen appears flickering or dim, make adjustment so it becomes clear (phase adjustment).

1 Press the MENU/ENTER button.

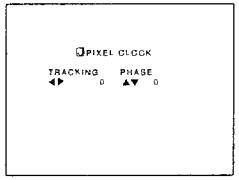
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "PIXEL CLOCK".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

- The submenu items of the PIXEL CLOCK menu appears on the screen.



(PIXEL CLOCK menu)

4 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to adjust "TRACKING" and "PHASE".

- Adjust the tracking and phase of the video screen being projected. To adjust the phase, first check for correct tracking adjustment.

Adjustment item	Sutton	Adjustment content
TRACKING	◄	The screen shrinks laterally (right-to-left). (–255 ← 0 ← +255)
	►	The screen extends laterally (right-to-left). (–255 → 0 → +255)
PHASE		Set to a position where text appears clear.
	▲	(–127 → 0 → +127)
	▼	(–127 ← 0 ← +127)

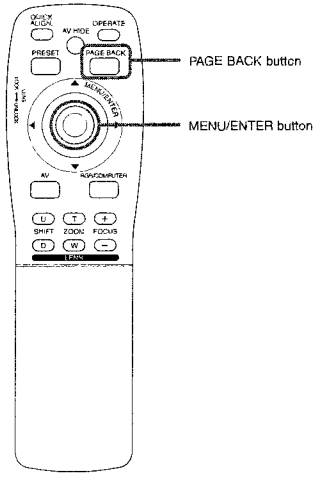
* To reset to the factory-set adjustment values, press the remote control's PRESET button.
Tracking and phase are reset to the factory-set adjustment values.

■ To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

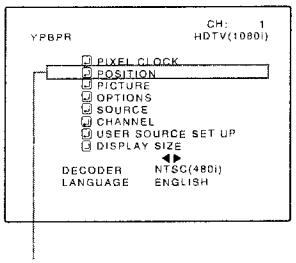
- To finish the menu display from the submenu display (PIXEL CLOCK menu), press PAGE BACK twice.

Adjusting the Screen Position

■ Remote control unit



■ Main menu



Submenu item (POSITION)

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Adjust the position of the screen if it is displaced.

1 Press the MENU/ENTER button.

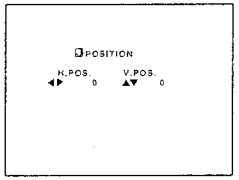
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "POSITION".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

- The submenu items of the POSITION menu appear on the screen.



(POSITION menu)

4 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to adjust "H. POS." and "V. POS.".

- Adjust the horizontal and vertical positions of the video picture screen being projected.

Adjustment item	Button	Adjustment content
H. PCS.	◄	The screen moves to the left. (–255 ← 0 ← +255)
	►	The screen moves to the right. (–255 → 0 → +255)
V. PCS.	▲	The screen moves upwards. (–120 → 0 → +120)
	▼	The screen moves downwards. (–120 ← 0 ← +120)

* To reset to the factory-set adjustment values, press the remote control's PRESET button. H. POS. and V. POS. are reset to the factory-set adjustment values.

■ To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

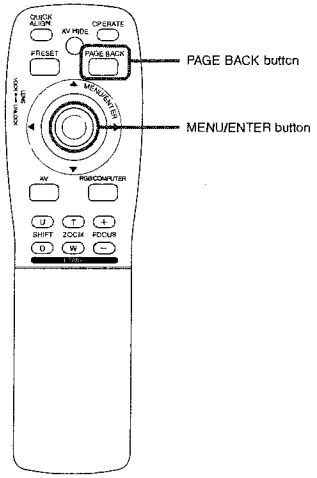
- To finish the menu display from the submenu display (POSITION menu), press PAGE BACK twice.

No.51666

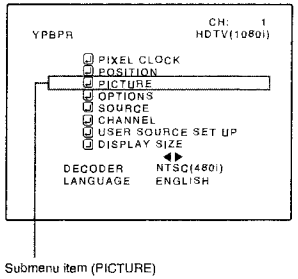
DLA-M4000LU
DLA-M4000LE

Adjusting Picture Quality

■ Remote control unit



■ Main menu



Submenu item (PICTURE)

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

Adjust brightness, contrast, etc. so you have the desired screen. Adjustment items (on the PICTURE menu) are different when video-related signals are input and when computer-related signals are input.

1 Press the MENU/ENTER button.

- The main menu appears on the screen.

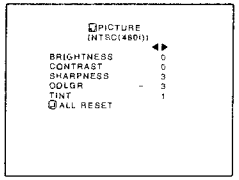
2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "PICTURE".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

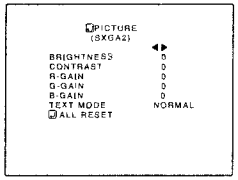
- The submenu items of the PICTURE menu appear on the screen.

■ When AV signals are input



(Video-image PICTURE menu)

■ When computer-related signals are input



(Computer-image PICTURE menu)

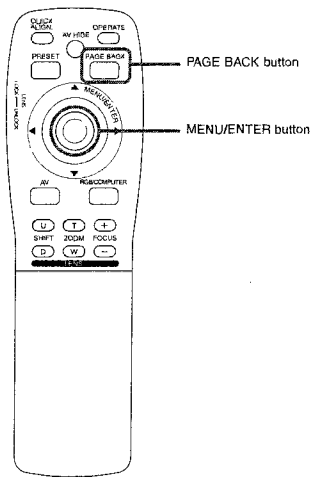
4 Press MENU/ENTER toward the ▲ or ▼ mark to select the item to adjust.

- The selected item (displayed in text) is shown in magenta color.

(To be continued on the next page)

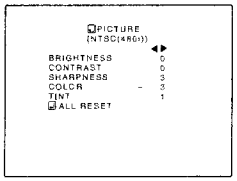
Adjusting Picture Quality (Cont.)

■Remote control unit



■Submenu items

[PICTURE menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

5 Press MENU/ENTER toward the ◄ or ► mark to adjust the selected item.

■ For video system input

- To adjust multiple items, repeat steps 4 and 5.
- To reset all items (to factory-set adjustment values, "0"), press MENU/ENTER toward the ▲ or ▼ mark to select "ALL RESET", and press MENU/ENTER.
- To reset only the selected items (ALL RESET excluded) to the factory-set adjustment value, press the remote control's PRESET button. The selected item is reset to the factory-set adjustment value.

Adjustment item	Button	Adjustment content
BRIGHTNESS	◄	Gets darker. (–30 ← 0 ← +30)
	►	Gets brighter. (–30 → 0 → +30)
CONTRAST	◄	Gets lower. (–30 ← 0 ← +30)
	►	Gets higher. (–30 → 0 → +30)
SHARPNESS	◄	Gets softer. (0 ← 7)
	►	Gets sharper. (0 → 7)
COLOR	◄	Gets softer. (–30 ← 0 ← +30)
	►	Gets deeper. (–30 → 0 → +30)
TINT	◄	Gets reddish. (–30 ← 0 ← +30)
	►	Gets greenish. (–30 → 0 → +30)
ALL RESET	MENU/ENTER	Resets all adjustment values of items on the PICTURE menu to the factory-set values (0).

Notes

- The adjustment item, TINT, is displayed only for NTSC system. It is not displayed (cannot be adjusted) when PAL or SECAM system signals are input.
- When video signals are input to the COMPUTER IN-2 terminal, adjustment items "COLOR" and "TINT" are indicated but cannot be adjusted.

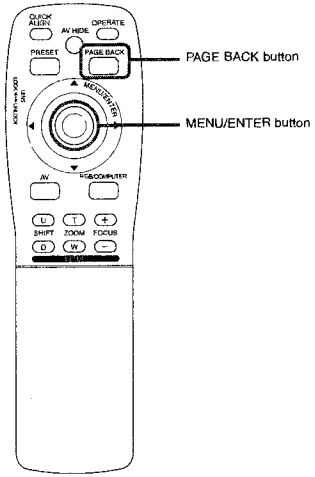
■ For computer system input

- To adjust multiple items, repeat steps 4 and 5.
- To reset all items (to factory-set adjustment values, "0"), press MENU/ENTER toward the ▲ or ▼ mark to select "ALL RESET", and press MENU/ENTER.
- To reset only the selected items (ALL RESET excluded) to the factory-set adjustment value, press the remote control's PRESET button. The selected item is reset to the factory-set adjustment value.

(To be continued on the next page)

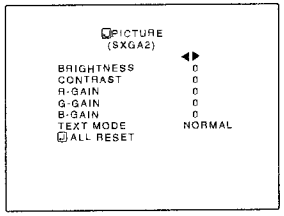
Adjusting Picture Quality (Cont.)

■Remote control unit



■Submenu items

[PICTURE menu]



Adjustment Item	Button	Adjustment content
BRIGHTNESS	◄	Gets darker. (–30 ← 0 ← +30)
	►	Gets brighter. (–30 → 0 → +30)
CONTRAST	◄	Gets lower. (–30 ← 0 ← +30)
	►	Gets higher. (–30 → 0 → +30)
R-GAIN	◄	Gets less reddish. (–30 ← 0 ← +30)
	►	Gets more reddish. (–30 → 0 → +30)
G-GAIN	◄	Gets less greenish. (–30 ← 0 ← +30)
	►	Gets more greenish. (–30 → 0 → +30)
B-GAIN	◄	Gets less bluish. (–30 ← 0 ← +30)
	►	Gets more bluish. (–30 → 0 → +30)
TEXT MODE		Sets a mode which allows easy text reading.
	◄	NORMAL ← TEXTE1 ← TEXTE2
	►	NORMAL → TEXTE1 → TEXTE2
ALL RESET	MENU/ ENTER	Resets all adjustment values of items on the PICTURE quality menu to the factory-set status (adjustment values: 0, text mode: NORMAL).

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

Note

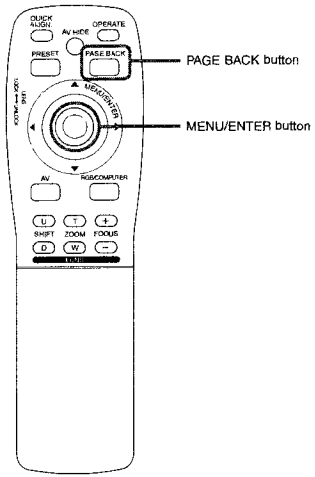
- There is a relationship between the adjustment of items R-GAIN, G-GAIN, and B-GAIN and that of item CONTRAST. For example, when adjustment values are : R-GAIN: 0, G-GAIN: 5, B-GAIN: 0, and CONTRAST: 0, changing CONTRAST to 1 changes the adjustment values as follows: R-GAIN: 1, G-GAIN: 6, and B-GAIN: 1.
  Also, when the adjustment value of any of R-GAIN, G-GAIN, and B-GAIN has reached -30 (minimum) or +30 (maximum), CONTRAST cannot be adjusted to any higher value. For example, when R-GAIN is 0, G-GAIN is 5, B-GAIN is 0, and CONTRAST is 0, increasing CONTRAST allows the other adjustment values to increase until R-GAIN: 25, G-GAIN: 30, and B-GAIN: 25, then CONTRAST becomes 25 and cannot be adjusted to any higher value.

● To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

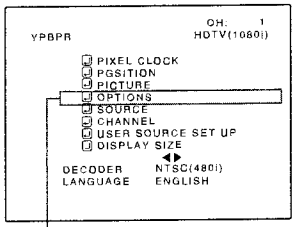
- To finish the menu display from the submenu display (PICTURE menu), press PAGE BACK twice.

Setting and Adjusting Other Functions (OPTIONS)

■ Remote control unit



■ Main menu



Submenu item (OPTIONS)

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer system signals are input.

The following optional functions can be set (adjusted).

- MENU AUTO OFF
- LINE DISPLAY
- RIGHT LEFT REV.
- TOP BOTTOM INV.
- CLAMP
- RESIZE
- BACK COLOR
- COLOR TEMPERATURE
- ASPECT CHANGE
- SLEEP TIME
- LAMP TIME

Memo

About the lamp use time

The lamp use time indicates the accumulated used hours of the light-source lamp and cannot be set or adjusted. When you have replaced with a new light-source lamp, reset the lamp use time.

Note

- The RESIZE function works for only computer system input. It does not work for video system input.

1 Press the MENU/ENTER button.

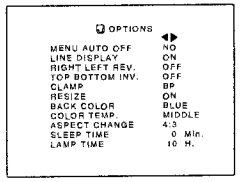
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "OPTION".

- The selected item (displayed in text) is shown in magenta color on the screen.

3 Press the MENU/ENTER button.

- The submenu items of the OPTIONS menu are displayed.



(OPTIONS menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to aelect an item to set (adjust).

- The selected item (displayed in text) is shown in magenta color.

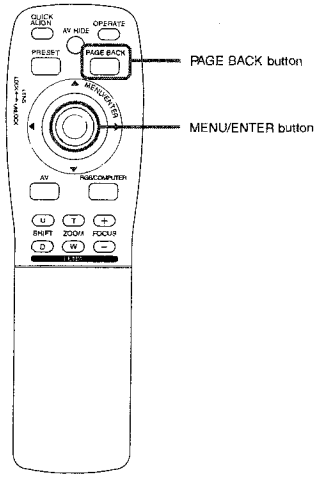
(To be continued on the next page)

No.51666

DLA-M4000LU
DLA-M4000LE

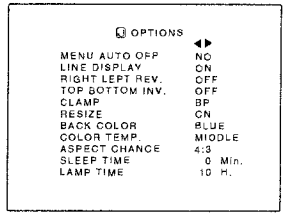
Setting and Adjusting Other Functions (OPTIONS) (Cont.)

■Remote control unit



■ Submenu items

[OPTIONS menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals ara input and when computer-systam signals are inpul.
- When you turn the RESIZE funotion ON, allowing the screen to be enlarged virtually lo its full size for projection (resizing display), the video image (resolution) becomes coarse.

5 Press MENU/ENTER toward the ◄ or ► mark to select an item to set (adjust).

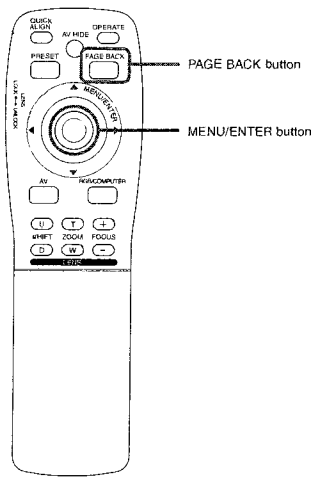
- To adjust multiple items, repeat steps 4 and 5.

Adjustment item	Button	Adjustment content
MENU AUTO OFF	◄/►	Sets whether to clear the menu display automatically a fixed time later or not. (Factory setting : NO) YES: Clears the display automatically in about 25 seconds. NO : Does not clear the display automatically. NO ◄——► YES
LINE DISPLAY	◄/►	Sets whether to show the line display (Y/C, VIDEO, etc.) at the top of the projected screen or not (Factory setting : ON) OFF: Does not show the line display. ON : Shows the line display. (The line display disappears about 5 seconds after it is shown.) OFF ◄——► ON
RIOHT LEFT REV.	◄/►	Reverses videc image right-to-left. (Factory setting : OFF) OFF: For the front method ON : For upside hanging from the ceiling OFF ◄——► ON
TOP BOTTOM INV.	◄/►	Inverses video image upside-down. (Factory setting : OFF) OFF: For normal set-up ON : For upside hanging from the ceiling OFF ◄——► ON
OLAMP	◄/►	Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp is used at BP. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST. (factory setting: BP) BP : The clamp pulse is positioned at the back porch. ST : The clamp pulse is positioned on the sink tip. BP ◄——► ST
RESIZE	◄/►	When tbe number ot pixels (resolution) scught by the input video is smaller than thet (resolution) cf D-ILA device, the video image is then enlarged to virtually full screen size ol D-ILA device and projected (resizing display). (Factory setting : ON) Does not work (cannot be set) for videc system input. OFF : Does not enlarge the video image lcr projection. When the number of pixels sought by video image is smaller than that ol D-ILA device, projection takes place on a small screen size with a black area arcund the screen. ON : Enlarges virtually to the full screen size cf D-ILA device for projection (resizing display). OFF ◄——► ON

(To be ountinued on the next page)

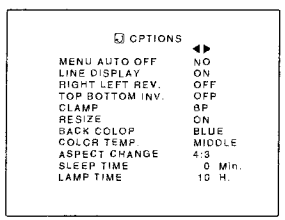
Setting and Adjusting Other Functions (OPTIONS) (Cont.)

■Remote control unit



■ Submenu items

[OPTIONS menu]



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in tho current mode.
- Items to be set (adjusted) are different when AV signals are input and when computar-system signals are input.

Adjustment Item	Button	Adjustment content
BACK COLOR	◄/►	Sets background color when there is no input signal. (Factory setting : BLUE) BLUE ⟷ CYAN ⟷ BLACK ⟷ GREEN ↕ ↕ YELLOW ⟷ RED ⟷ MAGENTA
COLOR TEMP.	◄/►	Sets the color temperature of the video image being projected. Make adjustment when the image becomes reddish or bluish. (Factory setting : MIDDLE) LOW : Color temperature decreases (video image becoming reddish). MIDDLE: Results in middle color temperature. HIOH : Color temperature increases (video image becoming bluish). LOW ⟷ MIDDLE ⟷ HIGH
ASPECT CHANGE	◄/►	Sets the vertical-to-horizontal ratio (4 : 3 or 16 : 9) of the video image projected. (Factory setting : 4 : 3) 4 : 3 : The aspect ratio of the screen becomes 4 : 3. Set it to 4 : 3 for video of NTSC, NTSC4.43, PAL, SECAM. 16 : 9: The aspect ratic of the screen becomes 16 : 9. Set it to 16 : 9 for HI-Visicn devices (W-VHS VCR, etc.) 4 : 3 ⟷ 16 : 9
SLEEP TIME	◄/►	Sets the length of sleep time which automatically brings the projector into stand-by state. You can select one of the following sleep times : 10 minutes, 20 minute, 30 minutes, 60 minutes and 0. (Factory setting : 0 minutes) 10 ⟷ 20 ⟷ 30 ⟷ 60 ⟷ 0 If set to "0" minutes, this function does not work.

● To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

- To finish the menu display from the submenu display (OPTIONS menu), press PAGE BACK twice.

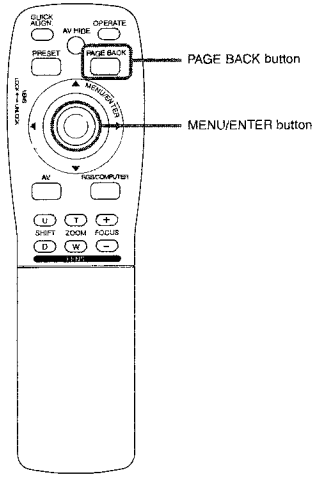
Note

- When you view a conventional (normal) 4 : 3 video picture, which is not wide video picture, on the projector's screen the aspect change function, the upper and lower parts of the video picture become partially invisible. View such an original video picture in 4 : 3 mode, respecting the producer's intention.

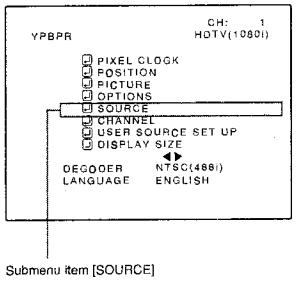
No.51666

Changing (Setting) the Source

■ Remote control unit



■Main menu



Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

Normally, use the source setting in AUTO. If use in AUTO is unstable such as color not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal.
Also, USER mode, which is a user-dedicated source, is available.

- When shipped from the factory, the source settings are as follows:

Input mode	Factory setting	Input mode	Factory setting
VIDEO	PAL/SECAM	RGB 1	AUTO
Y/C	PAL/SECAM	RGB 2	AUTO
Y, PB/B-Y, PR/R-Y	AUTO	—	—

Notes

- Depending on the signal from a device connected, adjustment may be needed after a dedicated source is set. If that is the case, adjust the appropriate items.
- When the input mode (SOURCE) is VIDEO or Y/C, and if AUTO is set, the automatic detecting function may work, possibly causing the screen to be intermitted or disturbed. In that case, set to a dedicated source (forced mode).
- When special effect playback (fast-forward/twice-speed/triple-speed) is performed on a video deck, etc, the picture may be disturbed or intermitted, depending on the device.

1 Press the MENU/ENTER button.

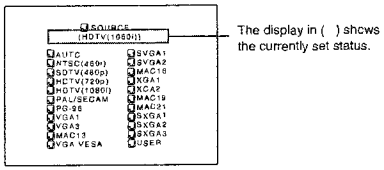
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select "SOURCE".

- The selected item (displayed in text) is shown in magenta color.

3 Press the MENU/ENTER button.

- The submenu items, SOURCE menu, appears on the screen.



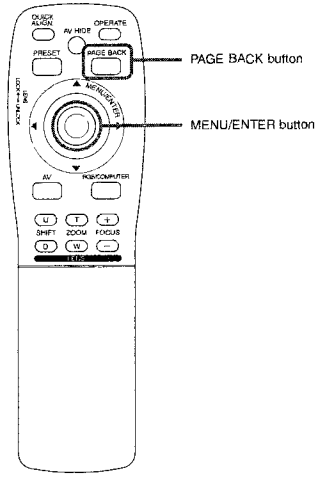
(SOURCE menu)

4 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to select a source from the "SOURCE" items.

- The selected item (text display) is shown in magenta color.

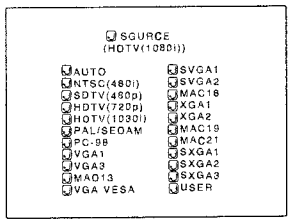
Changing (Setting) the Source (Cont.)

■ Remote control unit



■Submenu

[SOURCE setup menu]



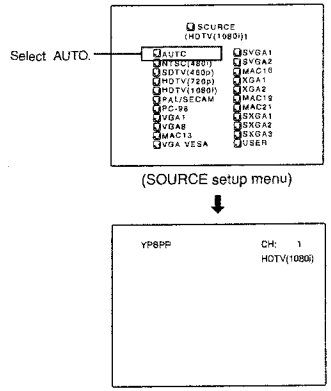
Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

5 Press MENU/ENTER to set (fix).

■ When a source setting "AUTO" is selected:

Under "SOURCE" shown at the top of the screen, AUTO is displayed in ( ), and the menu will automatically be cleared, finishing the setting procedure. Then, information on the input source will he shown for about 5 seconds.

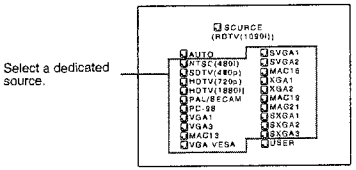


(SOURCE setup menu)

■ When a source setting "DEDICATED SOURCE" is selected:

Under "SOURCE" shown at the top of the screen, a dedioated source name is displayed in ( ), and the setting prooedure is finished.

- To finish the menu display, press PAGE BACK twice. (The display goes back to the main menu with the first press, and the main menu is cleared with the second press.)



(SOURCE setup menu)

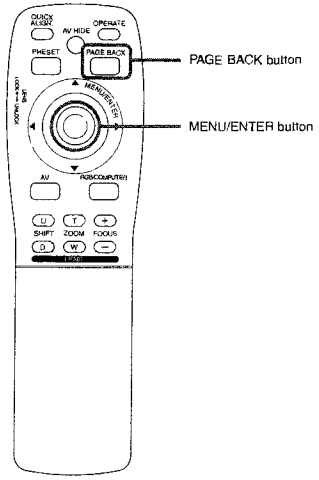
(To be continued on the next page)

No.51666

DLA-M4000LU
DLA-M4000LE

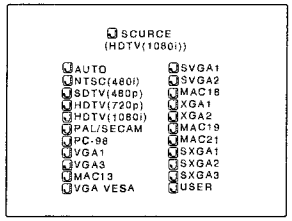
Changing (Setting) the Source (Cont.)

■ Remote control unit



■Submenu

[SOURCE setup menu]



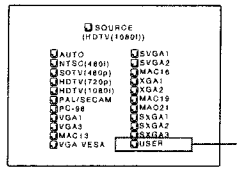
Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

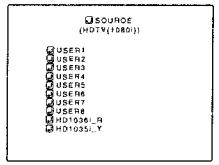
■ When a source setting "USER" is selected:

The "USER SOURCE setup menu" is displayed.

- On the "USER SOURCE setup menu (user)", a source created by the user can be selected.
- To select a user area, it must already be user-registered with the "USER SOURCE setup menu".



(SOURCE setup menu)



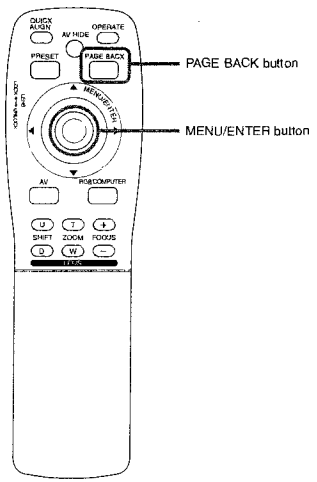
(SOURCE setup menu (user))

1. **Press MENU/ENTER toward the ▲ or ▼ mark to select a user area.**
   - The selected item (text display) is shown in magenta color.
2. **Press MENU/ENTER down to set a source.**
   - By having a source set, the source for the projector switches to the setting registered to the user source.

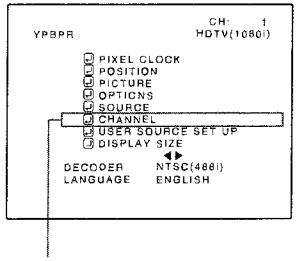
■ Pressing PAGE BACK twice will bring you back to the main menu. To finish the main menu, press PAGE BACK again.

Setting Up Channels

■ Remote control unit



■Main menu



Submenu item [CHANNEL]

Notes

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

When you set up channels, you can select a line and a multiple of sources (up to 30) for each channel. If you are using a switcher and set switcher numbers, you can also select each channel from the switcher side.

Memo

- With multiple sources having been set on channels, when a channel is selected, incoming signal is automatically checked and switched to one of the sources registered on the channel.
  If a matching source is not found among the registered sources, all other available sources are searched to find a matching source.

1 Press the MENU/ENTER button.

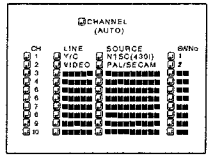
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "CHANNEL".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "CHANNEL setup/selection menu", appears on the screen.
- If no "LINE", "SOURCE" or "SWNo" item is registered, unregistered characters (■) are displayed on the screen.



(CHANNEL setup menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select the channel (CH) whose contents you want to change.

- The selected CH is shown in magenta color.

5 Press MENU/ENTER toward the ◄ or ► mark to select the item to set (LINE, SOURCE or SWNo).

- The selected item is shown in magenta color.
- Unregistered channel items (LINE, SOURCE or SWNo) can also be selected. However, "LINE" and "SOURCE" need to be already set.

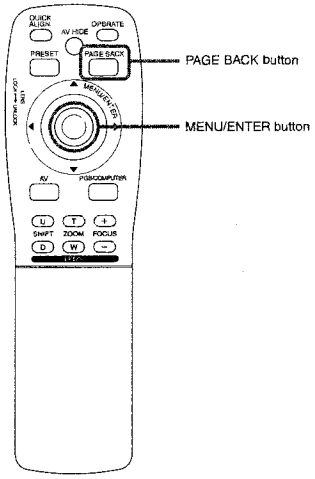
6 Press MENU/ENTER to set.

- Channel items LINE, SOURCE and SWNo) for the "CH" selected on the "CHANNEL setup • selection" menu are set.
- For how to set each item, see pages 48 to 51.

No.51666

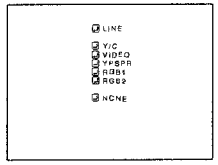
Setting Up Channels (LINE setup)

■ Remote control unit



■ When LINE is selected:

The "LINE selection menu" screen appears.



(LINE selection menu)

1 Press MENU/ENTER toward the ▲ or ▼ mark to select a line from the "LINE" items.

• The seleoted item (text display) is shown in magenta colcr.

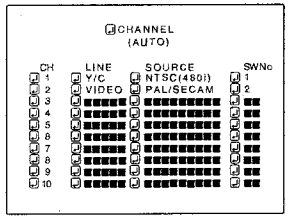
2 Press the MENU/ENTER hutton to set.

• When you press MENU/ENTER, the "LINE" item shown in magenta color is selected, and the display goes back to the "Channel setup • seleotion" menu.

• If the "NONE" of "LINE" items is selected and MENU/ENTER is pressed, all the settings, "LINE", "SOURCE" and "SWNo", cf the CH already selected will be cleared (erased).
(If the selected channel is the same with the one in ( ) under the "CHANNEL" display at the top of the CHANNEL setup • selection menu, the registration or settings cannot be cleared.)

■ Pressing PAOE BACK twioe will bring you back to the main menu. To finish the main menu, press PAOE BACK egain.

■CHANNEL setup • selection menu

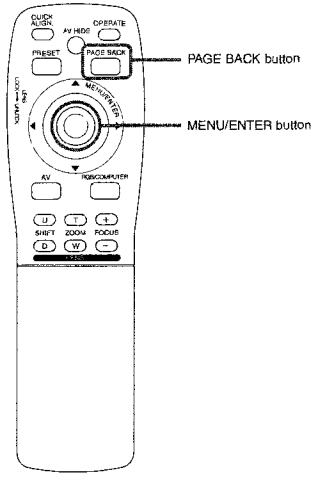


Note

• The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Setting Up Channels (SOURCE setup)

■ Remote control unit

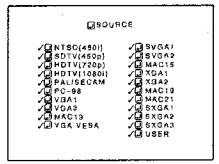


■ When "SOURCE" is selected :

The "SOURCE registration" screen eppears.

• To be able to display a menu, a "LINE" needs to be already registered.

• Sources already selected are indicated with check marks.



(SOURCE registration menu)

1 Press MENU/ENTER toward the ◄, ►, ▲ or ▼ mark to select a source from the "SOURCE" items.

• The selected item (text display) is shown in magenta color.

2 Press the MENU/ENTER hutton to set.

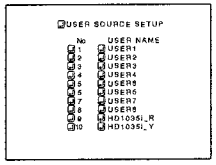
• When the item is set, a oheck mark is placed next to its souroe name, which is registered as a "SOURCE".

• If you place the cursor on a "SOURCE" item with a check mark attached and press MENU/ENTER, the check mark will disappear and the item will become unregistered as a "SOURCE" item. (If the selected ohannel is the same with tho one in ( ) under the "CHANNEL" display at tha top of the CHANNEL setup/selection menu, the registration or settings cannot be cleared.)

■ When "USER" is selected from "SOURCE registration menu":

The "USER SOURCE registration menu" appears.

• Registered usor sources are indicated with check marks.

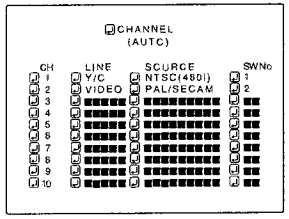


(USER SOURCE registration menu)

1.Press MENU/ENTER towerd the ▲ or ▼ merk to seleet e source from the SOURCE items.

• The selected item (text display) is shown in magenta oolor.

■CHANNEL setup • selection menu



Note

• The seleoted item is shown in magenta color. Items shown in gray color cannot be operated or set in the currant mode.

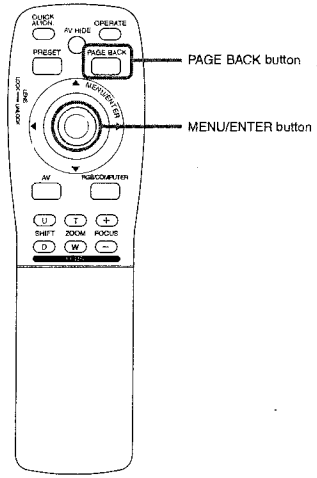
(To be continued on the next page)

No.51666

DLA-M4000LU
DLA-M4000LE

Setting Up Channels (SOURCE setup) (Cont.)

■ Remote control unit

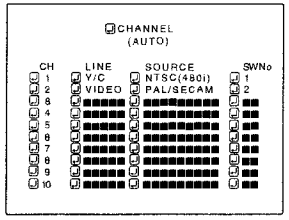


2.Press the MENU/ENTER button.

- When the item is set, a cheok mark is placed next to its user name, which is registered as a "SOURCE".
- If you place the cursor on a "SOURCE" item with a check mark attached and press MENU/ENTER down straight, the check mark will disappear, making the item unregistered as a "SOURCE" item.

■ Pressing PAGE BACK twice will bring you back to the main menu. To finish the main menu, press PAGE BACK again.

■CHANNEL setup • selection menu

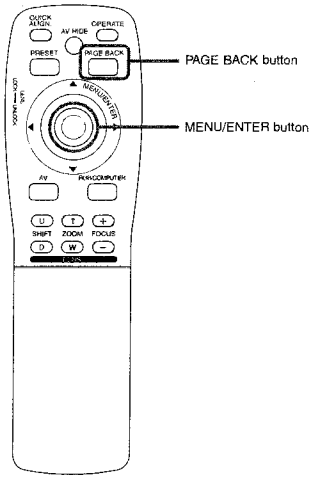


Note

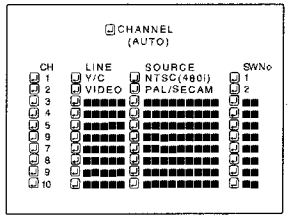
- The selected item is shown in magenta color. Items shown in gray oolor cannot be operatod or sot in the ourrent modo. (If no line is registered, you cannot set any "SOURCE" item.)

Setting Up Channels (SWNo. setup)

■ Remote control unit



■CHANNEL setup • selection menu



Note

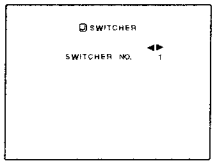
- Tho solected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode. (If no line is registered, you cannot set any "SW No" item.)

This setup prooedure is to make dedioate switoher operation linked to the selection of designated channels.

■ When a switcher number "SWNo" is selected :

The "Switcher number setup menu" is displayed.

- To be able to display a menu, a "SOURCE" needs to be already set.



(SWITCHER No. setting menu)

1 Press MENU/ENTER toward the ◄ or ► mark to select a switcher number.

- Numbers that you oan select from are numbers from 1 to 20 and characters "■■" that signify non-registration.
- If you press MENU/ENTER toward the ◄ mark, the number becomes smaller, and pressing the button toward the ► mark makes the number larger.
- If you select "■■", "SWNo" will be deselected.
- If the selected ohannel is the same with the one in ( ) under the "CHANNEL" display at the top of the CHANNEL setup seleotion menu, the registration or settings cannot be cleared.

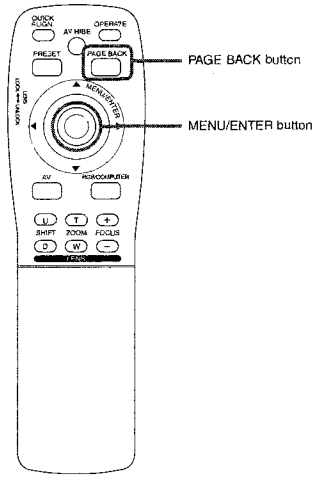
2 Press the PAGE BACK button to set.

- When you press PAGE BACK, the switcher number is set, and the display returns to the "CHANNEL setup/selection menu".

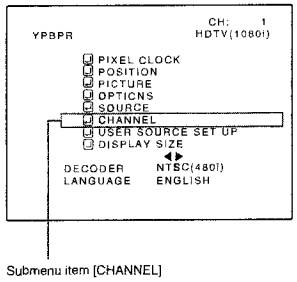
No.51666

Changing Channels (CH Change)

■ Remote control unit



■Main menu



Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Channels which have lines and sources registered can be switched. The channels can be switched by using either a direct channel or the "CHANNEL setup • selection" menu.

■ To switch channels using a "DIRECT CHANNEL"

1 Press PAGE BACK while no menu is displayed.

- A channel No. is displayed on the right upper area of the screen.
- A channel number where lines and sources are registered is displayed. (If such a channel is not available, AUTO will be selected.)

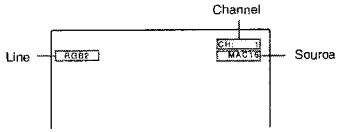
(Direct channel switching menu)

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a cbannel number.

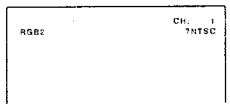
- The numbers that ycu can select from are from 1 to 10 and AUTO.
- If you press MENU/ENTER toward the ▼ mark, the number becomes smaller, and pressing the button toward ▲ makes the number larger.
- Pressing PAGE BACK cancels the selection.

3 Press the MENU/ENTER button to set.

- The screen switches automatically to the line and source which are set for the channel.

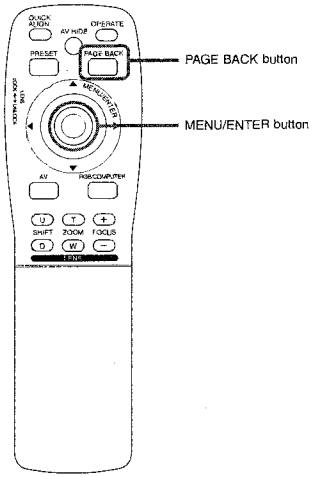


- If the scurce being input to the projector is not registered on the selected channel, a "?" mark is placed before the source name.

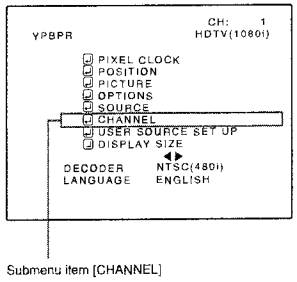


Changing Channels (CH Change) (Cont.)

■ Remote control unit



■Main menu



Note

- The selectad item is shown in magonta color. Items shown in gray color cannct be operated or set in the current mode.

■ To switch on the "CHANNEL setup • selection" menu :

1 Press the MENU/ENTER button.

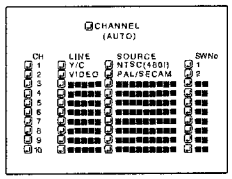
- The main menu appears en the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "CHANNEL".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "CHANNEL setup • selection menu", appears on the screen.



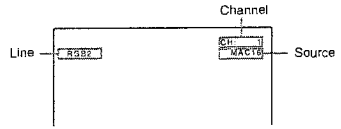
(CHANNEL setup • selection menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select the channel (CH) you want to switch to.

- The selected CH is shown in magenta color.

5 Press the MENU/ENTER button to set.

- The line input, source and switcher number registered to the channel are selected.



- If the source being input to the projector is not registered on the selected channel, a "?" mark is placed before the source name.

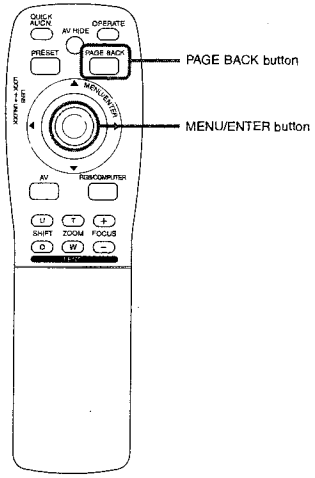
- To be able to select a channel, line input, source and switcher number need to be already registered.

No.51666

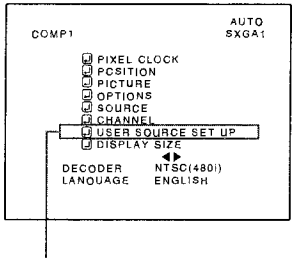
DLA-M4000LU
DLA-M4000LE

Setting Up (or Changing) User Sources

■ Remote control unit



■Main menu



Submenu item [USER SOURCE SET UP]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

A maximum of 10 types of information can individually be registered regarding the source being input and projected through the line connection.

■ Preparation

With source setup "AUTO" selected, keep signal being input.

1 Press the MENU/ENTER button.

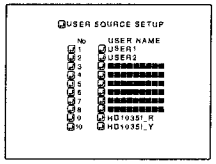
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "USER SOURCE SETUP".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "USER SOURCE SETUP menu", appears on the screen.
- "■" is displayed for Nos which have no user source registered.



(USER SOURCE set up menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select a "No" where no user registration has been made.

- The selected item (text display) is shown in magenta color.

5 Press the MENU/ENTER button to set.

- The source data of the line now selected is registered as a user source and a temporary user name is displayed.
- If you select and set on the No which has a source registered, the source is overwritten by a new source.

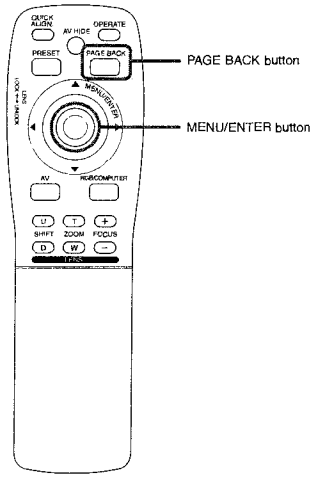
■ To return to the main menu, press PAGE BACK. To finish the main menu, preas PAGE BACK again.

Note

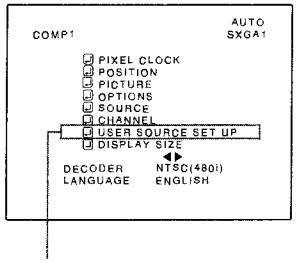
- When EXT. IN (Video, Y/C or YP_BP_R) is selected, the display size cannot be changed.

Setting Up (or Changing) User Sources (Cont.)

■ Remote control unit



■Main menu



Submenu item [USER SOURCE SET UP]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

To change the registered user source name.

1 Press the MENU/ENTER button.

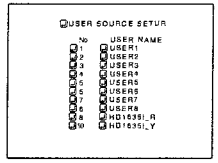
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "USER SOURCE SETUP".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "USER SOURCE SETUP menu", appears on the screen.



(USER SOURCE set up menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select the number, "No", of the user name to be changed.

- The selected item (text display) is shown in magenta color.

5 Press MENU/ENTER toward the ► mark to select the "USER NAME".

- The selected item (text display) is shown in magenta color.
- To be able to select a "USER NAME", a source needs to be already registered.

(To be continued on the next page)

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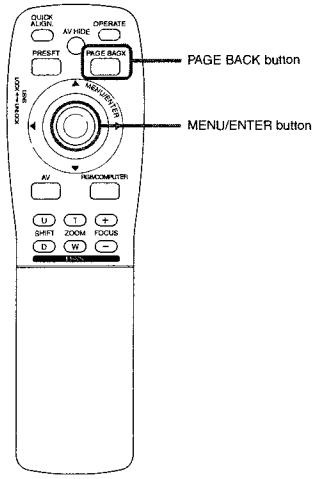
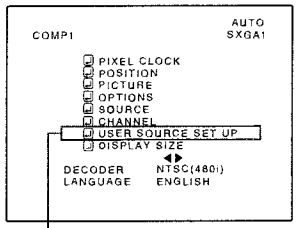
Setting Up (or Changing) User Sources (Cont.)

■ Remote control unit



■Main menu



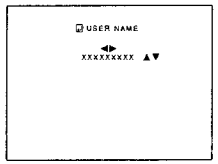
Submenu item [USER SOURCE SET UP]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

6 Press the MENU/ENTER button to set.

- The "USER NAME setup menu" is displayed.

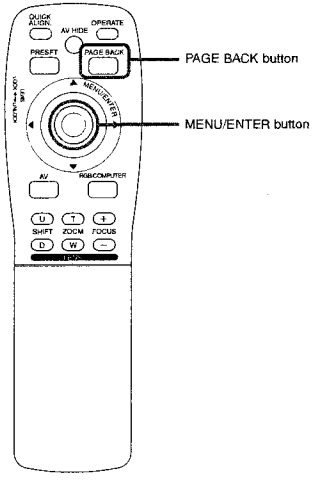


(USER NAME setup menu)

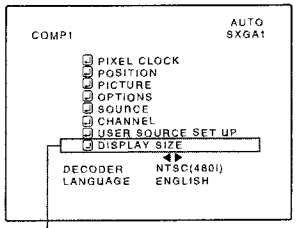
1. **Press MENU/ENTER toward the ◄ or ► mark to select positions where to enter characters.**
2. **Press MENU/ENTER toward the ▲ or ▼ mark to select positions where to enter characters.**
   - You can select any characters from A to Z, 0 to 9, _ and space.
3. **Press MENU/ENTER toward the ▲ or ▼ mark to select positions where to enter characters.**
   - The display returns to the "USER SOURCE SETUP" screen.
   - To delete a user name, overwrite the user name with spaces. However, if this user name area is registered as a source to any other channel on the "CHANNEL setup • selection" menu, or if this user name area is selected in AUTO mode or dedicated (forced) mode, the user name cannot be deleted. The user name before change will be displayed.
   - Up to 9 characters can be entered.

Setting Up (or Changing) the Display Size

■ Remote control unit



■Main menu



Submenu item [DISPLAY SIZE]

Note

- The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

In this section, the number of horizontal effective dots and that of vertical effective lines of the source being input are set.

1 Press the MENU/ENTER button.

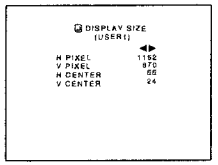
- The main menu appears on the screen.

2 Press MENU/ENTER toward the ▲ or ▼ mark to select a submenu item, "DISPLAY SIZE".

- The selected item (text display) is shown in magenta color.

3 Press the MENU/ENTER button to set.

- A submenu item, "DISPLAY SIZE adjustment menu", appears on the screen.



(DISPLAY SIZE adjustment menu)

4 Press MENU/ENTER toward the ▲ or ▼ mark to select an item to be adjusted.

- The selected item (text display) is shown in magenta color.

5 Press MENU/ENTER toward the ◄ or ► mark to adjust the item.

- To adjust other items, repeat steps **4** and **5**.

Memo

- It is recommended that you perform adjustments in the following order:
  1. Adjustment of H PIXEL and V PIXEL
  2. Automatic adjustment of QUICK ALIGNMENT
  3. Adjustment of H CENTER and V CENTER

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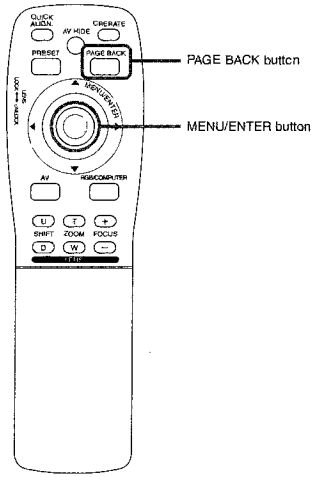
Setting Up (or Changing) the Display Size (Cont.)

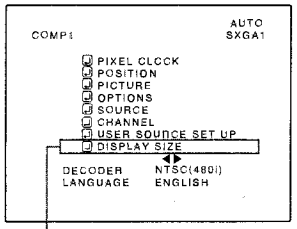
■ Remote control unit



Adjustment item	Contents of adjustment
H PIXEL	Adjusts the number of horizontal effective dots. Adjustment value (640←→1360)
V PIXEL	Adjusts the number of vertical effective dots. Adjustment value (350←→1024)
H CENTER	Adjusts the horizontal display position. Adjustment value (0←→639)
V CENTER	Adjusts the horizontal display position. Adjustment value (1←→511)

■ **To return to the main monu, press PAGE BACK. To finish the main menu, press PAGE BACK again.**

■Main menu



Submenu item [DISPLAY SIZE]

Note

• The selected item is shown in magenta color. Items shown in gray color cannot be operated or set in the current mode.

Filter Maintenance and Light-Source Lamp Replacement

Cleaning and Replacing the Filter

The filters should be cleaned periodically. If they are heavily stained, do not become clean if cleaned, or are damaged, replace them with new filters (Parts number: LC30506); otherwise, dirt and dust may get inside, possibly causing an adverse effect on the screen and preventing you from enjoying clear pictures.

■ **The projector has two filters installed, one on the right side and the other on the back.**

1 Bring the projector into stand-by state, and turn off the MAIN POWER switch.

Put the projector into stand-by, and make sure the STAND BY indicator is lit, then turn off the MAIN POWER switch. After that, disconnect the power cord from the wall outlet and the projector. For detailed procedures, refer to "Turning off the power" (page 25).

2 Remove the filter cover screws.

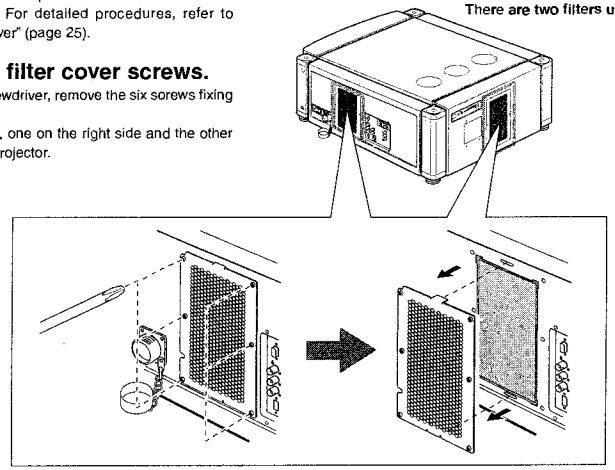
Using a Phillips screwdriver, remove the six screws fixing each filter.

Two filters are used, one on the right side and the other on the back of the projector.

Note

• If the filter is clogged with dirt, etc., the projector goes into an emergency mode (the EMERGENCY indicator blinks). So, clean the filter periodically. For the emergency mode, refer to pages 8 and 24.

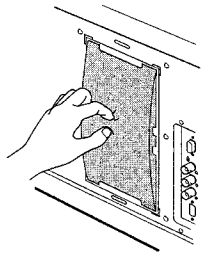
There are two filters used.



3 Remove the filters.

To remove the filter, pinch the center portion of the filter with your fingers and pull it toward you.

(The filter is held by four tabs.)



(To be continued on the next page)

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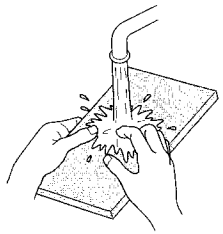
Cleaning and Replacing the Filter (Cont.)

4 Clean the filters.

Wash the filter in water with neutral detergent, and dry it in the shade.



5 Reinstall the filters.

To reinstall the filters to the projector, reverse the procedure for removing . Finally, be sure to reinstall the filter covers.

Notes

- Install the filters correctly; otherwise the projector will not operate normally.
- If the filters and/or filter holders are damaged, the projector may fail to operate. Then, replace with new parts.

CAUTIONS

- **Put on rubber gloves when using neutral detergent.**
- **After you have washed the filter in water, make sure the filter is completely dry before reinstalling it. Otherwise, electric shock or malfunction could occur.**
- **Do not clean the filter using a vacuum cleaner. Since the filter is soft, it may be sucked into the vacuum cleaner or damaged.**

About Light-Source Lamp Replacement

The light-source lamp has its service life. It is approximately 1000 hours.

When the light-source lamp approaches the end of its service life, its degradation progresses rapidly. When the lamp's used hours exceed 909 hours, the projector's LAMP indicator comes on. Also, at the start of projection (lamp energized), the message "REPL.-LAMP" appears on the projection screen for about two minutes. Then, the light-source lamp needs to be replaced. When lamp's service has reached 1000 hours, the projector's LAMP indicator starts blinking. The specified lamp replacement period is 1000 hours, but depending on use conditions, the replacement period may vary. If video image is dark and its color tint is extraordinary even after you have adjusted color tint and brightness, replace the light-source lamp a little earlier.
For replacing the light-source lamp, consult the dealer where you purchased your projector or a local service center.

Troubleshooting

Solutions to common problems related to your projector are described here. If none of the solutions presented here solves the problem, unplug the projector and consult a authorized dealer or service center.

Symptom	Probable cause	Corrective action	Page
Power is not supplied.	• Is the power cord disconnected?	• Insert the power cord (plug) firmly.	23
	• Is the main power switch turned on?	• Turn on the MAIN POWER switch.	25
	• Is the correct power voltage used?	• Check that AC220V is supplied.	3, 65
	• Has the breakertripped open?	• Check that the breaker is closed.	——
	• Has the lamp protective function activated? (This can occur if the power is shut down due to a power failure, etc.)	• Wait until the lamp has cooled down. (Turn on the main power sand let the fans cool the lamp.) About 10minutes later, press OPERATE on the remote control.	——
Light is not emitted, or light level is low.	• Is the lens cap removed?	• Remove the lens cap.	23
	• Is the lamp life near its end?	• Check the lamp use time on the menu, and if the lamp life is near its end, arrange for a replacement lamp, or replace a little earlier.	41, 59
	• Has the projector been moved from its installed place?	• Check the installed position.	——
With power on, operation starts but stops in a few minutes.	• Is the air intake or exhaust area blocked?	• Turn off the MAIN POWER switch, remove any blocking objects, and turn on the MAIN POWER switch again.	8, 9, 16
Video image does not appear.	• Is the correct input selected?	• Select the correct inputs with the AV and RGB buttons.	26
	• Are connected devices connected correctly?	• Connect connected devices correctly.	20, 21
	• Are signals being supplied from the connected devices?	• Set connected devices correctly.	——
	• Are input signals (scanning frequency, etc.) appropriate?	• Check if the signal is correct as input (scanning frequency, etc.). Input the appropriate signal.	19
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO or to the correct dedicated source (forced mode).	44, 46
Video image dims.	• Is brightness adjusted correctly?	• Adjust brightness on the menu.	38, 40
	• Is focus adjusted correctly?	• Adjust focus with the remote control's FOCUS (+/–) buttons.	27, 30
	• Is distance too short or too long?	• Set the projector at the correct distance.	18
Color is poor or unstable.	• Are TRACKING and PHASE adjusted correctly?	• Adjust TRACKING and PHASE on the menu.	30, 36
	• Is picture quality (color density, etc.) adjusted correctly?	• Adjust picture quality on the menu.	38, 40
	• Is the correct CLAMP selected?	• Select the correct CLAMP on the OPTION MENU.	41, 42

(To be continued on the next page)

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Troubleshooting (Cont.)

Symptom	Probable cause	Corrective action	Page
During video replay, video image sometimes is disturbed	• have Installation adjustment been performed?	• For installation, consult the dealer where you purchased the projector or a local service center.	——
Image color is poor or image is disturbed	• Is picture quality (color desity, etc.) adjusted correctly?	• Adjust picture quality on the menu.	38, 40
	• Is the correct broadcast system (color system) selected?	• Set the broadcast system (color system) to AUTO.	34
	• Are signals (scanning frequency, etc.) to connected devices appropriate?	• Check if the signal is appropriate (scanning frequency, etc.), and input the appropriate signal.	19
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO. If the problem still persists, set it to the correct dedicated scurce (forced mode).	44 ~ 46
Specific colors faii to he dispieyed	• Are specifications of the signal being input matching those of the video input card?	• Check specifications of both signal being input and video input card.	——
	• Is the input cable connected correctly?	• Check cahle connections.	21
	• Has the lamp's life como to its end?	• Check the used lamp hours on the menu, and if the lamp life is near its end, consult the dealer where you purchased the projector or a local service center.	60
The upper pert of the video imege bowe or distorts.	• While computer system signal is input, isn't a sync signal for composite sync (Cs) or G on sync being input?	• Input separate sync signals for vertical sync (V) and horizontal sync (H) signals.	10
	• Isn't signal with much jitter or skew distortion being input to a video deck?	• Input signals with little jitter or distortion.	——
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO. If the problem still persists, set it to the correct dedicated source (forced mode).	44 ~ 46
	• Have the channol's setup contents been changed?	• Check the setup contents been changed.	47 ~ 51
The projection position on the screen has ahifted.	• Have the channel's setup contents been changed?	• Check the setup contents of the channel and correct them if necessary.	47 ~ 51
	• Is sync signal being input correctly?	• Check sync signal and related connection.	10
	• Has the projector been moved from its installed place?	• Check the installed position.	——
Video image auddenly go out.	• Aren't vidoo turned off by pressing the remote control's AV HIDE button?	• Press the remote control's AV HIDE button to turn video on.	12
	• Are all color video signals being input?	• Check signals and connections.	19 ~ 23

Troubleshooting (Cont.)

Symptom	Probable cause	Corrective action	Page
Lens shift adjustment is not possible.	• Is the shift center lock pin for shipment left attached?	• Remove the shift center lock pin, and then make adjustments. (For how to remove the shift center lock pin, consult the dealer where you purchased the projector or a local service center.)	16
Remote control unit does not work.	• Are batteries installed correctly?	• Match the polarities of batteries correctly (+ to + and - to -).	13
	• Are batteries exhausted?	• Replace with new batteries.	13
	• Is there a shielding object between the remote control unit and the remote senscr?	• Removo any shielding objects.	——
	• Is the distance too long?	• Use the remote contrcl unit at a nearer point.	22
	• Is the remote control's LENS LOCK↔UNLOCK switch set to LOCK?	• Set the remote control's LENS LOCK↔UNLOCK switch to UNLOCK?	12

■ When the emergency indicator starts blinking:

Refer to the CAUTION and NOTES on page 24.

* This projector is equipped with a microcomputer that may operate abnormally due to interference from external components. If this happens, turn off the main power and disconnect the power cord from the wall AC outlet. Then reconnect the power cord to AC outlet and turn on the main power again.
(Fcr the turning on and off the power, see pages 25)

No.51666

Specifications

Optical mechanism system

• Projection method	3D-ILA device, 1 lens, 3 primary color optical shutter method
• D-ILA device	0.9" measured diagonally (1365 ×1024 pixels) × 3 (Total number of pixels : 4,193,280)
• Projecting lens (separately available)	GL-M4023SZ 3:1~7:1 zoom lens GL-M4015S 1.5:1 fixed focus lens
• Screen size	60" to 300" [recommended] to 600" [maximum] measured diagonally (*with aspect ratio : 4 : 3)
• Light-source lamp	1.6 KW xenon lamp

Electrical system

• Color system	NTSC, NTSC4.43, PAL, SECAM (* Automatic switching / manual switching)
• Resolution	1365 × 1024 dots (*S-XGA full resolution, during RGB input) 1000TV lines (*Horizontal resolution, aspect ratio 4 : 3, during video input)
• Scanning frequency	Horizontal frequency : 15 kHz ~ 82 kHz Vertical frequency : 50 Hz ~ 78 Hz

Input / output

[EXT. IN (AV IN input)] * The Y/C (S-video) and VIDEO (composite video) signals can be input with the video board installed.

• Y/C
1-line, mini-DIN 4 pin × 1 (* With the video board, separately available, installed)
Y (luminance signal) : 1Vp-p, 75Ω (negative sync)
C (chroma signal) : 0.286Vp-p (burst signal), 75Ω [NTSC]
: 0.3Vp-p (burst signal), 75Ω [PAL]

• VIDEO
1-line, BNC × 1 (* With the video board, separately available, insfalled)
Composite video signal : 1Vp-p, 75Ω (negative sync)

• Y, P_B/B-Y, P_R/R-Y
1-line, BNC × 3
Component (Y,B-Y,R-Y) signals
Y : 1Vp-p, 75Ω (negative sync or 3-value sync)
P_B/B-Y : 0.7Vp-p, 75Ω
P_R/R-Y : 0.7Vp-p, 75Ω

[RGB IN (RGB input)]

• RGB IN-1 (PC)
1-line, D-sub 3-row 15 pin × 1
Analog RGB signal
R : 0.7Vp-p, 75Ω
B : 0.7Vp-p, 75Ω
G : 0.7Vp-p, 75Ω
G on Sync : 1Vp-p, 75Ω (negative sync)
Sync signal : 1 to 5Vp-p, high impedance (positive/negative polarity)
* Some connected devices may not correspond to composite sync (Cs) or G on sync signal.

• RGB IN-2
1-line, BNC × 5
Analog RGB signal
R : 0.7Vp-p, 75Ω
B : 0.7Vp-p, 75Ω
G : 0.7Vp-p, 75Ω
G on sync : 1Vp-p, 75Ω (negative sync)

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Specifications (Cont.)

Horizontal sync/composite sync signal (H/Cs)
H : 1 te 5Vp-p, high impedance (positive/negative polarity)
Cs : 1 to 5Vp-p, high impedance (positive/negative polarity)
Vertical sync signal (V)
V : 1 to 5Vp-p, high impedance (positive/negative polarity)
* Some connected devices may not correspond tc composite sync (Cs) or G on sync signal.

[RGB OUT (RGB OUTPUT)]

• RGB OUT
1-line, D-sub 3-row 15-pin × 1
Analog RGB signal
R : 0.7Vp-p, 75Ω
B : 0.7Vp-p, 75Ω
G : 0.7Vp-p, 75Ω
G on sync : 1Vp-p, 75Ω (negative sync)
Horizontal sync/composite sync signal (H/Cs)
H : TTL level (Polarity : Same for input)
Cs : TTL level (Polarity : Same for input)
Vertical sync signal (V)
V : TTL level (Polarity : Same for input)

[CONTROL]

• RS-232C : 1-line, D-sub 9-pin × 1
* RS-232C-interface specified control terminal for controlling this projector with a personal computer.

• REMOTE : 1-line, mini-jack × 1

General

• Power requirements	AC 200 V~240 V, 50 Hz/60 Hz
• Power consumption	12 A (at 220 V)
• Allowable operation temperature	+ 5°C to + 40°C
• Allowable relative humidity	90% or less (no condensation)
• Allowable storage temperature	– 5°C to + 60°C
• Maximum outside dimensions	Approx. (W)687 mm × (H)420 mm × (D)793 mm (excluding protruding parts)
• Weight	Approx. 70.0kg
• Accessories	(Refer to page 67.)

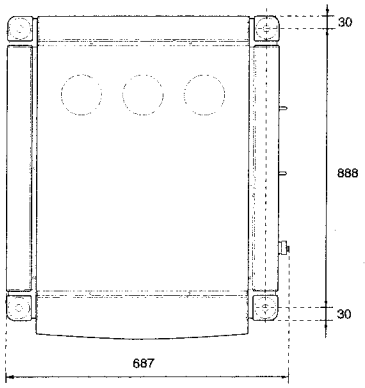
** Design and specifioations are subject to change without notice.*
** D-ILA devices are manufactured with a very high-precision technology, allowing 99.99% of the pixels to be effective. Only 0.01% or less of the pixels are missing or always on.*
** For easy understanding, pictures and illustrations are shown by being emphasized, omitted or composed, and may be more or less different from actual products.*
**TRADEMARKS*
IBM , IBM PC, and VGA are registered trademarks of International Business Machines Corporation. Macintosh is registered trademarks of Apple Computer, Inc.
VESA is a trademark of the non-profit organization Video Electronics Standard Association.
All other product names mentioned herein are used for identifioation purposes only, and may be the trademarks or registered trademarks of their respective companies.

DLA-M4000LU
DLA-M4000LE

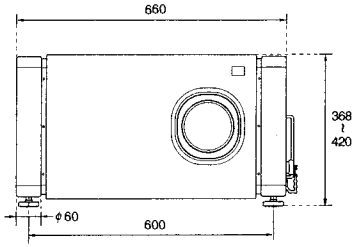
Outside dimensions

■ Top

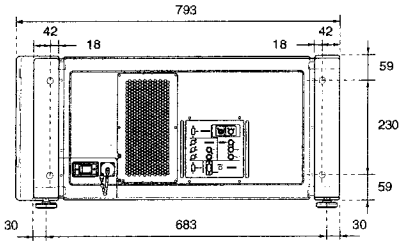
Unit: mm



■ Front

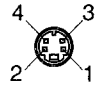


■ Side



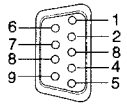
Pin assignment (Specifications for terminals)

■ Y/C terminal



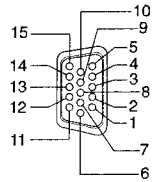
Pin number	Signal name
1	GND (Y)
2	GND (C)
3	Y
4	C

■ RS-232C terminal



Pin number	Signal name	Pin number	Signal name
1	N/C	6	N/C
2	RD	7	N/C
3	TD	8	N/C
4	N/C	9	N/C
5	GND		

■ COMPUTER IN-1 (PC) / COMPUTER OUT Terminal

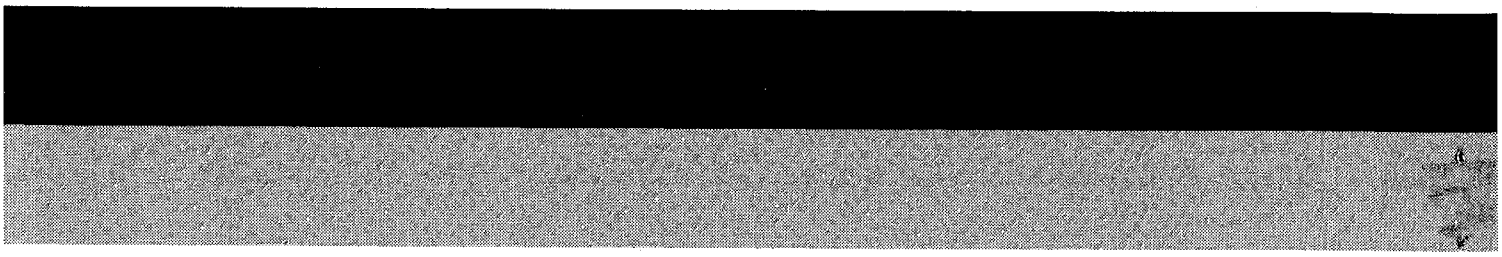


Pin number	Signal name	Pin number	Signal name
1	Red	9	N/C
2	Green	10	GND (SYNC)
3	Blue	11	GND
4	N/C	12	N/C
5	N/C	13	H.SYNC
6	GND (Red)	14	V.SYNC
7	GND (Green)	15	N/C
8	GND (Blue)		

Information on separately sold items

- **Prejectien lens**
  GL-M4023SZ — 3 : 1~7 : 1 zoom lens
  GL-M4015S — 1.5 : 1 fixed-foous lens
- **Video board**
  PK-G1101D — A board to be used for adding composite video signal input and Y/C (S-Video) function to the projeotor.

No.51666



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